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The Accounting Review

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WHY RESEARCH*

LOUIS H. PENNEY
President, American Institute of Certified Public Accountants

THE Council of the American Institute of Certified Public Accountants, at its 1959 Spring meeting, approved a new accounting research program, which is now being implemented.

The program includes an Accounting Principles Board of eighteen, who have been elected by Council for staggered three year terms. The activity is to be staffed by a Director of Accounting Research, assisted by a group of senior research accountants and junior research accountants. It is anticipated that this program, when it is fully operative, will require a budget of at least $150,000 a year.

This enlarged program replaces the activities of the Committee on Accounting Procedure which goes out of existence at the end of the Institute's current fiscal year after twenty-one years of active and meritorious service to the accounting profession. The Board will also assume the functions of the Committee on Terminology.

Why should CPAs be concerned with accounting research, why is research needed, and how is the proposed program supposed to work?

The number of CPAs in the United States has more than tripled during the last 20 years. At the same time, the stature of the CPA in the eyes of the public and the extent of his recognition as a professional man has increased even more. While nearly all CPAs render to their clients many services in addition to auditing, their professional recognition is definitely attributable to the audit function.

It is in the audit function that the CPA makes the greatest use of his professional skill and his specialized knowledge, gained from his years of study and experience. Here is where his reputation is placed at stake as he lends his name to financial statements to increase their credibility.

In expressing an opinion on financial statements, the CPA is supposed to state whether they are fairly presented "in conformity with generally accepted accounting principles." Those accounting principles might be termed ground rules for the preparation of statements. Without them there would be little uniformity in statement presentation and they would lose much of their value to management, to stockholders, to credit grantors, and to governmental regulatory agencies.

I am well aware that many of our local practitioners, whose practice consists mainly of bookkeeping and write-up work, taxes, and various services to the management of small businesses, feel that accounting principles are remote from their interests. I have even heard it suggested that

* This paper was presented at the annual meeting of the Association at the University of Colorado on August 25, 1959.

the Institute spends too much time and money on this subject, which some critics say is mainly for the benefit of the larger accounting firms. This, in my opinion, is a serious mistake. We CPAs are all members of one profession. Our profession achieves its greatest visibility in the eyes of the general public through the opinions on financial statements included in corporate reports which are sent to millions of stockholders—somewhere in the area of twelve million citizens of the United States, according to the most recent estimates.

If corporate financial statements as audited by CPAs should be attacked in the financial press, in congressional investigations, or otherwise, the CPAs will come in for what is publicly known as a "pasting." All CPAs will suffer from this because the public, in its mind, does not separate the profession into large or small, or local or national firms. Criticism of any CPA hurts all CPAs.

So I think that every CPA, regardless of the nature of his practice, has a vital interest in the subject which I am discussing.

There was a time when there was but little uniformity in financial statements and no reference to accounting principles appeared in auditor's reports. There also developed general dissatisfaction among investors, bankers, and others leading to widespread demand for change and improvement. That demand was responsible in part for legislation that brought the Securities and Exchange Commission into being in 1934.

While an Institute committee, of which George O. May was chairman, can be credited with coining the phrase "accepted accounting principles," the SEC has been largely responsible for its inclusion in nearly all the audit reports of the last twenty years. The American Institute's Committee on Accounting Procedure was appointed in 1938 and has since applied itself with great diligence to identifying generally accepted accounting principles and to stating them in writing. The development of accounting received great impetus. The independent CPA became more important and received greater recognition. This increased recognition extended to all CPAs as a body, including the local practitioner who perhaps issued very few opinion reports. The whole profession benefited.

In recent years, however, a disturbing cloud has appeared on the horizon. Our profession, in the opinion of many, has been far too slow in determining what are generally accepted accounting principles. The Committee on Accounting Procedure usually held four or more two-day meetings a year. The members also did a great deal of work between meetings. The twenty-one man committee has had the assistance of Carman Blough, Director of Research, and of other Institute staff members. As a senior technical committee of the Institute, the committee was authorized to issue statements on accounting procedure but only with the concurrence of two-thirds of its twenty-one members, and that majority was sometimes hard to get.

In spite of the arduous work, committees of necessity move slowly. During the twenty-one years of the committee's existence only 51 bulletins have been issued, the last being Bulletin No. 51 on Consolidated Financial Statements, issued in August, 1959. For example, two were issued in 1956, one in 1957, and two, plus a revision, in 1958.

Many people believe that pressures are again building up among investors, government agencies, legislators, bankers, and others for still greater uniformity in statement presentation. If these pressures reach the explosive stage, as they did in 1933 and 1934, we CPAs may not have the opportunity the next time to continue with the development of recognized ac-

counting principles. It would be far more likely, instead, that some government agency would be named to dictate the form and arrangement of financial statements and the principles to be followed in their preparation.

That might be a calamity of the greatest magnitude to the accounting profession. Mark Eaton once remarked that such a happening "would probably mean the end of progress." The CPA could be reduced to filling in government forms and his opportunity to utilize professional abilities would be greatly curtailed. As night follows the day, so would come loss of prestige and decreased stature in the public eye, followed by declining income and lessened importance in the economic life of our country. Those undesirable results would not be limited to those CPAs who audit the large nationwide corporations. The loss of prestige, stature, and income would affect everyone in the profession, including the local practitioner with but few audit accounts.

What reason has anyone to complain regarding lack of uniformity in financial statements and delay in the development of generally accepted accounting principles? I will illustrate a limited number of divergencies that have disturbed many people.

One matter to which a great deal of consideration was given a couple of years ago by the Committee on Accounting Procedure was intangible drilling costs in the oil industry.

All of you probably know that the tax laws permit intangible drilling costs to be charged to expense for income tax purposes when incurred. Virtually all companies claim the tax deduction. Some of the companies prepare their financial statements on the same basis. The majority of the major oil companies whose stocks are listed on the New York Stock Exchange, however, deduct the intangible drilling costs for federal income tax purposes, yet capitalize them in their financial statements to be allocated against income by some appropriate method over the expected life of the wells.

One, at least, of these major companies reflects in its financial statements the deferred income tax liability it must pay when the capitalized expenses, which have already been deducted for income tax purposes, are eventually charged against income on the books. The other companies do not make such tax provision in their statements and perhaps properly so, under the bulletins of the Committee on Accounting Procedure, if there is a presumption that the differences between the tax returns and the income statements will recur regularly over a comparatively long period of time.

The financial statements of all these companies are examined by practicing certified public accountants and presumably all the opinions are to the effect that they are presented in conformity with generally accepted accounting principles. The question is, are there, or should there be, different accounting principles that can be applied with equal propriety to the same set of facts with the results reflecting substantial differences of ten, or even a hundred, million dollars.

The Committee on Accounting Procedure discussed this problem at great length for more than a year without reaching a point where a special bulletin could be issued. It was finally decided that this was part of a general problem in the area of research, exploratory, and development costs. As such, there were many more industries, rather than just the petroleum industry, involved. Rather than try to settle one small part of the problem, when the whole problem needed attention, the question of intangible drilling costs was merged with the much broader area of research, exploratory, and development costs.

The broader problem is still under discussion.

That is in the nature of a problem in statement uniformity. Many other examples could be cited, such as accelerated depreciation, inventory valuation methods, and the like, where differences in treatment, none presently considered unacceptable, produce quite different results.

There is another troublesome area that has to do with the financial statements of regulated industries. I will cite one example of interest.

It is the general practice in the railroad industry to take no depreciation on road beds, ballast, railroad rails, and ties. This is in conformity with accounting regulations of the Interstate Commerce Commission. There are other regulatory bodies that have requirements that do not fit with what we generally think of as sound and conservative accounting practices but this is probably the most glaring.

The Interstate Commerce Commission was formed about seventy years ago and many of its accounting rules and regulations were promulgated shortly thereafter at a time when that type of replacement and betterment accounting, as distinguished from depreciation accounting, was pretty generally accepted. There has been speculation as to what the effect would be if the railroads were to catch up today with depreciation on those depreciable assets to which depreciation has never been applied.

The Institute's committee on relations with the Interstate Commerce Commission has decided that this method of accounting "does not accord with practices generally followed by other industries." A number of our large accounting firms make railroad audits. Some audit reports recite that the accounts are presented in accordance with the regulations of the Interstate Commerce Commission and that they are not stated in conformity with generally accepted accounting principles. Others merely say that the statements are presented in accordance with governmental regulations. Here is an area of difference.

There is still another problem that keeps cropping up with more and more frequency, especially during the last ten years. It is almost a certainty to be much more in our conciousness in the future. I refer to the possible effect on income of the changing price level, or to get it down to one word, inflation.

We accountants in the English speaking world are almost wholly committed to reflecting items on our financial statements at monetary cost. We use the monetary unit as a fixed point of reference. As long as transactions are completed within a short period of time and in the absence of explosive inflation, profits determined on that basis are sound. If transactions are entered into which cannot be completed except over a long period of time, say ten years or twenty years, the monetary unit is less useful.

At a testimonial dinner in his honor in Detroit in October, 1958, William A. Paton said that it was rather absurd meticulously to convert Canadian dollars downward a few points in preparing consolidated statements of a U. S. company and its Canadian subsidiary, and then go blithely on and indiscriminately combine 1940 American dollars with distinctly different 1958 American dollars.

In 1948 the Institute sent out a questionnaire asking recipients whether they thought a substantial change in accounting methods was necessary to report corporate income satisfactorily in view of changes in price levels. Only 28 per cent said "yes." In 1957 another questionnaire was sent on the same general subject but with the question somewhat different. Did the recipient think that current dollar cost of depreciation should be reflected in some

manner in corporate reports to stockholders, assuming that an acceptable means of measuring price level changes were available. This time 74 per cent said "yes." As noted, the questions were different but the answers seem to indicate a trend toward change of opinion.

Many corporate executives believe that their companies will be slow to adopt any form of fluctuating dollar accounting until the income tax laws are changed so that they may secure a tax benefit. Many other people believe, however, that the tax laws will not be changed to recognize changing price levels on anything except inventories until a substantial number of large taxpayers change their accounting methods or form of presentation of financial information. It should be pointed out that a number of corporations were using what was essentially LIFO, then called the base stock method of inventory valuation, in their financial statements and accounting to stockholders long before provision for LIFO was incorporated in the income tax laws.

It would seem logical, therefore, that many of our large listed corporations, if they are anxious for tax relief from inflation, should be reflecting some of the effects of changing price levels in their financial statements, at least in supplemental footnotes.

The Committee on Accounting Procedure has several times considered the subject of reflecting the effect of price level changes in financial statements. Each time a substantial majority of the committee has favored no action in that direction or has deferred it for later consideration. The Securities and Exchange Commission has gone along in this with the Committee on Accounting Procedure.

The securities of many foreign corporations are widely held in this country. Lever Brothers and Philips Lamp are cases in point. The form of their financial statements is not subject to the opinions of the accounting profession in the United States and both companies reflect the effect of changing price levels on fixed assets and depreciation in their annual reports. The same is true of other foreign corporations.

To bring this problem a little closer to home, I recently reviewed the record of a small dealer in industrial and farm machinery. In the last eighteen years the price of the product handled by the dealer has increased approximately 3½ times. In 1940 his sales were $1,300,000. In 1957 they were $4,500,000. In other words he has done no more than keep even from a sales standpoint insofar as units are concerned. At the same time, however, inventories increased by a million dollars. Receivables increased by $1,400,000. During the intervening years they earned $2,000,000, paid $900,000 in income taxes, $200,000 in dividends, and added $900,000 to the net worth, increasing it from $200,000 to $1,100,000. The machinery and tools and other fixed assets increased from $30,000 to $170,000 at depreciated values. They are still in the same location.

Here is a business that on the surface appears to be very profitable. Its liabilities have jumped, however, from $500,000 to $2,400,000 and it is having great difficulty financing the same volume of business that it was doing 18 years ago. The principal difficulty is, of course, the $900,000 in taxes that have been taken out of the concern when fully half of the taxable profit has been represented by price increases.

That is a relatively small case. Many of the large corporations in the United States are faced with a much more serious problem because they are larger. The controller of one of the large automobile manufacturers recently pointed out that it now costs 200 million dollars to do the model retooling job that took only 30 mil-

lion dollars thirty years ago. New plants are being built today at a cost of 100 million dollars to replace worn out or outmoded facilities that did not cost one-fourth as much. The increase year by year in the cost of replacing facilities is greater than the amount of income that can be retained in the business after paying federal taxes, and after paying sufficient dividends to give the shares investor appeal in the event additional capital must be sought from the public. All three of the large automobile manufacturers have had to negotiate large long-term loans in recent years.

The problems I have cited are probably among the more troublesome that are before our profession at the present time. They are by no means the only ones, however, as there are many more.

In a speech at the 1957 annual meeting of the American Institute of Certified Public Accountants in New Orleans, Alvin H. Jennings, the then incoming President, recognized the urgency of this situation and proposed a re-organization of the Institute's accounting research activities. Shortly thereafter he appointed a special committee which, after a lot of work and study, recommended the revised program that has since been adopted. That special committee, together with a lot of other people who have given study to the problem, believe that the new research organization can move ahead in research and in the reduction to writing of accepted accounting principles much more rapidly than the Committee on Accounting Procedure has been able to do during the twenty-one years of its existence.

The new approach to accounting research is organized with three main parts: a research staff, an Accounting Principles Board, and a group of advisory committees. The research staff is to be headed by a director of Accounting Research who is authorized to locate and employ his senior and junior research assistants.

The Board, which takes the place of the present Committee on Accounting Procedure, will be the only group in the Institute having authority to make pronouncements on accounting principles. The Board consists of eighteen members, nominated by the Executive Committee and elected by Council to serve staggered three-year terms.

The majority of the Board members are practicing accountants. The remainder are from the field of education except for two or three that are presently in industry.

It is intended that a separate project advisory committee for each research project will be available to confer with and advise the Director and his staff. The principal contact of the research organization with the accounting profession will be through these committees. Each project advisory committee will include at least one person from the Accounting Principles Board. The other members will come from the accounting profession, both practicing accountants and educators, plus, upon occasion, individuals from outside the profession.

It is contemplated under the new program that accounting research studies will be published by the Director of Accounting Research with summaries also being published in *The Journal of Accountancy* and possibly other professional channels of communication. These studies are to set forth all opposing views and reasoning on the subject under consideration and, when possible, the Director is to take a definite stand favoring a certain position as representing a generally recognized accounting principle. Thus there should be no delay awaiting committee action or approval before publication. It is thought that this method will bring prompt response from a large part of our profession and also from interested sources outside the profession, such

as educators, management, investors, etc.

No opinion or statement of the research staff is to constitute an official pronouncement of the Institute as being a generally recognized accounting principle. However, if the conclusions of a research study received the approval or disapproval of a two-thirds majority of the Accounting Principles Board, the Board would ordinarily issue a formal statement of its own which would be considered authoritative. The proponents of the program believe that some of our most difficult problems can thus be aired and perhaps solved in a reasonable time as compared with years, or never, under present procedures.

A few people, on the other hand, have expressed the feeling that the accounting research organization will not accomplish any more in the same period of time than has been done with the past arrangement. They point out that many of the subjects that have been considered by the Committee on Accounting Procedure in the past are of such a controversial nature that they have never been able to get a two-thirds majority. They feel that the eighteen man Accounting Principles Board will have views just as divergent and that it will take just as long to get affirmative action.

Time will tell which view is correct. I can report, however, that the new Board is well aware of the problems and determined to put forth its best efforts for the earliest possible solution.

One of the Kiplinger publications and a series of books published in New York, both aiming to help consumers or purchasers get their money's worth, advertise over the radio. Within the last few months I have heard the announcer on each program state that a past president of the American Institute of Certified Public Accountants has advised that the financial statements of an enterprise can differ by millions of dollars, depending on how they are prepared. The advertiser's product is then recommended as something to help the listener avoid being misled by such accounting differences.

I recognize that we cannot secure complete uniformity in accounting, and probably we should not. It does seem logical, however, to keep working toward uniformity wherever that is a suitable goal.

If divergencies are so wide that they merit mention in radio advertising and yet still comply with accepted principles, it is entirely understandable that the layman on the street or even a pretty sophisticated businessman might wonder, when we use the term "generally accepted accounting principles," whether we really know what we are talking about.

It is not to be denied that the profession has come a long way in developing statements of accounting principles, but in recent years our pace has been much too slow. The Institute's new research program may give us a fresh start with a new, but not radical, approach.

INFLATION AND COMPANY FINANCE*

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THE great inflation of the last twenty years has caused, if not a revolution in accounting thought, at least a civil war among accountants. Since accounting is concerned so much with valuation, it is perhaps surprising that we have been able to shelter so long behind the fiction that price level changes may be ignored for accounting purposes. Be this as it may, the severity and persistence of the post-war inflation have forced accountants to re-examine the consequences of basing reports on historical money values, when the value of money is itself changing. In the process, I believe, we have learned a good deal about the accounting function itself. But although there has been general agreement about the effects which stem from the use of conventional accounting procedures during inflation, there has been violent controversy about the remedial action that ought to be taken to deal with the problem. Many solutions have been proposed, but so far none has proved generally acceptable.

It is not possible in this paper to examine the reasons for this failure among accountants to agree on a course of action that will avoid the pitfalls of conventional practice. It seems, however, that any new approach must meet certain conditions if it is to win the support of the accountancy profession and of businessmen and others who make use of accounting reports. In particular, since accounting is primarily a process of classification and measurement, it is necessary to agree on what the accounts are designed to measure and how the measurement may best be carried out. It is necessary, in other words, to go back to first principles in order to establish accounting concepts that are both easily recognizable (in terms of the purposes of accounting and the aims of business policy) and easily measurable in the accounting records and reports.

The need for relatively easy measurement is stressed because many of the solutions that are advanced to deal with the price level problems, while reasonably meeting conceptual or theoretical requirements, seem altogether too complicated to apply in practice. Furthermore, it is not always realized that the concepts used in accounting depend very much on the purposes to be served by the measurement. It is therefore frequently necessary to recognize the existence of concepts other than the ones with which accountants have been traditionally concerned. One of the major reasons for the confusion that has resulted from the price-level controversy, and the failure of accountants and economists to agree on remedial action, has been the attempt by nearly everyone engaged in the argument to find a unique measure of business surplus—one that will be suitable for all purposes and acceptable to all parties making use of accounting data. I believe that this idea of a unique concept of business surplus is a will-o'-the-wisp. It seems to me that further progress in relation to the price level problem—and indeed in many other important problems of accounting—depends on the recognition that alternative concepts may be needed for different purposes. It then remains to

* This paper was presented at the annual meeting of the Association at the University of Colorado on August 26, 1959.

decide on the appropriate concept for each purpose and to consider whether or not the concept can be—or should be—measured within the double-entry framework of accounts.

Business enterprise accounting is of course largely concerned with the measurement of operating results and financial position; hence the importance of the two main summary statements, the income statement and the balance sheet. It follows, I believe, that the central concepts of accounting are related in some way to measures of net operating results or net financial position. To give such concepts generic names we may call them respectively periodic surplus and funds employed.

Alternative Concepts of Periodic Surplus

The traditional accounting concept of periodic surplus is that of profit, and profit measurement in accounting involves a comparison of costs and revenues for a given period. More explicitly, profit is the arithmetical difference between the revenue realized in a given period and the costs incurred with a view to producing that revenue. Problems of profit measurement are thus essentially problems of valuing revenue or costs. It is important to remember, however, that, in order to place values on these transactions, accountants have been forced to make a number of limiting assumptions or postulates. The most important of these are:

(a) the assumption that the values for accounting purposes of assets which are absorbed into costs (fixed capital assets and inventories) and of the corresponding cost items (depreciation and cost of goods sold) may be determined by reference to the historical money costs of the assets concerned;

(b) the notion that only realized revenue needs to be recorded;

(c) the assumption of discrete accounting periods;

(d) the postulate that the recording and reporting processes are to be carried out in terms of the monetary unit of account.

In this paper it is not necessary to dwell on the significance of these assumptions, which are responsible for the more important technical limitations inherent in the measurement of accounting profit. Given these valuation assumptions we may conclude that the conventional accounting concept of profit is a reasonably definitive one. Moreover, despite the fact that estimates and opinions are involved in the measurement, it is a concept that can be measured fairly accurately. It is necessary to emphasize, however, that accounting profit is a measure of periodic surplus in terms of historical money values. For many accounting purposes such a measure is sufficient. Accounting profit has the advantage of being a more or less objective measure which may be derived by reference to the actual transactions of an enterprise. But this concept of accounting profit should not be regarded as a unique measure of periodic surplus—one which is suitable for all purposes. This is so for two well-known reasons, each of which results primarily from the application of the monetary postulate.

The first is that profit is not necessarily a measure of periodic surplus in terms of current values. The whole purpose of the profit measurement process, as we have seen, is to derive a measure in terms of historical money values. If the unit of measurement—the monetary unit—itself changes in value, it is difficult to say what the profit figure means. If the value of money changes, or to put it another way, if price levels fluctuate, then revenues and costs which have been recorded at different points of time are not being measured in terms of the same unit.

The second limitation of accounting profit as a measure of periodic surplus is that it is calculated in a way which fails to preserve the real value of the enterprise's

capital (proprietorship funds). Adherence to historical money values in the profit measurement process merely maintains the money value of the capital which proprietors have contributed. During inflation, this money capital will command a diminishing volume of physical assets (fixed capital assets and inventories). This is the "capital erosion" effect. It may be possible to augment the money capital by withholding profits from distribution, or by raising fresh capital, but unless this is done either the scale of operations must be reduced or the business will become undercapitalized.

These limitations mean that the conventional accounting concepts of revenue, cost and profit are unlikely to be suitable for purposes of determining business policy or securing effective managerial control over operations. Nevertheless, the accounting concepts cannot be discarded. Because accounting profit is based on actual events, it is relatively easy to calculate; so long as historical money values are adhered to, a measure of surplus is derived which is reasonably free from the bias of subjective estimates and opinions. Moreover, a money concept of surplus has some meaning in a society where financial relationships are necessarily expressed in monetary terms, and it is a legitimate purpose of accounting to measure such a concept.

Even if the conventional concept of profit is retained, however, it should be clear that at least one other concept of periodic surplus is needed. Such a concept must be relevant to the managerial purposes of policy-making and control. In particular, if the limitations of the profit concept are to be avoided, this alternative concept of surplus must be based on current values, and it must bear a close relationship to the amount that may safely be distributed without encroaching on the real value of proprietorship capital. What is needed, in other words, is a concept of current distributable surplus.

Once again there is no reason for believing that there is only one concept which conforms with these requirements; nor does it necessarily follow that such a concept must be measured within the double-entry framework. The concept of periodic surplus underlying the American Accounting Association's approach to the price level problem, which involves the revaluation of revenues and costs in a supplementary statement outside the double-entry framework, clearly constitutes one measure of distributable surplus which meets the purposes outlined above. If this approach is to be criticized, it must be on the ground of its complexity and its action in unnecessarily divorcing the accounting reports from the double-entry records on which the reports are based.

It is possible to formulate another concept of current distributable surplus, one which meets the managerial requirements discussed above and which can be measured easily within the double-entry framework. This concept I describe as "current income," defined as the excess of revenues, expressed in current prices, over costs, also expressed in current prices. If current income is defined in this way it may be easily reconciled with the conventional profit concept as part of the ordinary accounting processes. This is an obvious advantage when, as we have seen, both concepts are significant for different purposes of accounting.

Since accounting profit for a period is the difference between revenues and costs expressed in historical prices, and current income is the difference between revenues and costs expressed in current prices of the period, it follows that differences between the two concepts may be explained in terms of transactions that are recorded during one accounting period, but are not absorbed into revenues or costs until subsequent periods. In other words, the differences between the two concepts are due

to differences in the prices used to value revenue or cost items carried forward from one accounting period to another. In measuring accounting profit these items are valued in terms of the prices of past periods, whereas in measuring current income they need to be valued in terms of prices of the current period.

Some items of revenue and cost that are carried forward from one accounting period to another, for example accrued revenue and prepaid expenses, are usually so insignificant that price level changes thereon may be ignored for practical purposes. This leaves two major items of cost, depreciation of fixed capital assets and the opening inventory element in cost of goods sold, which are valued at the prices of a past period for purposes of profit measurement, but which need to be valued in prices of the current period in order to measure current income. In essence, therefore, the difference between accounting profit and current income may be regarded as the difference between historical-cost depreciation and current-cost depreciation, *plus* the difference between the historical cost of opening inventories and their current cost.

Historical-cost depreciation, the conventional accounting concept, may be defined as the cost, in terms of the asset's historical money value, of using a fixed asset for purposes of producing revenue during a particular accounting period. Current-cost depreciation, which is the relevant concept in determining current income, may be defined as the current cost of using a fixed asset in producing revenue during the period. This current cost must be estimated by reference to the current replacement value of the asset. The relationship between historical-cost and current-cost depreciation may thus be expressed as follows:

$$\text{Current-cost depreciation} = \text{Historical-cost depreciation} \times \frac{\text{Current replacement value of asset}}{\text{Historical cost of asset}}$$

In calculating cost of goods sold for purposes of profit measurement, opening inventories are recorded at historical prices, i.e. the prices of the preceding accounting period. (For the time being it is assumed that the first-in-first-out method of inventory valuation is used.) Accounting cost of goods sold is then equal to opening inventories *plus* purchases *minus* closing inventories, all recorded at their historical money costs. In determining current cost of goods sold, on the other hand, it is necessary to record opening inventories in terms of their current values. More explicitly, the current cost of goods sold may be defined as opening inventories *plus* purchases, *minus* closing inventories, all valued at current prices of the period. Since the historical cost of purchases and closing inventories is the same as their current cost (they are automatically recorded in terms of prices of the current period) the difference between the accounting and current cost of goods sold is given by the difference between the historical and current cost of opening inventories. Given the historical cost of opening inventories, the current cost may be calculated by reference to the cost price of inventories acquired at the end of the current period. That is to say, opening inventories can be converted to current values by revaluing them in the same prices as closing inventories. A little reflection will indicate that the effect of revaluating opening inventories in terms of closing prices is to measure the cost of goods sold in the average (and not the end-year) prices of the current period.

Only two adjustments, which we may call the depreciation and the inventory adjustments, thus need to be made to accounting profit in order to derive a measure of the current income concept that has been formulated. What action should

be taken in the books of account to record these adjustments, assuming they are positive (i.e. prices are rising)? All transactions should first be recorded on the basis of historical values, in order to derive the conventional accounting measure of profit. Net accounting profit should then be transferred to a valuation adjustment account in which debit entries should be made for the two adjustments, with corresponding credit entries in Fixed Asset and Inventory Revaluation Reserve Accounts. The balance of the Valuation Adjustment Account, representing Current Income, should be transferred to the Income Appropriation or Distribution Account, in which income appropriations will be recorded in the usual manner. The Appropriation Statement prepared for purposes of presentation should record, in a separate valuation adjustment section, the conversion of accounting profit to current income:

business surplus are to be measured in the accounts, then clearly some thought should be given to the question of terminology. Indeed, one of the major reasons for the confusion that has arisen over the price level problem in accounting has been the tendency by all concerned—accountants, economists and businessmen—to regard the terms profit and income, and sometimes the terms revenue and income, as synonymous. No confusion can arise if the term profit is restricted to the technical accounting concept; and the term income is used only to describe the concept of current distributable surplus, which incidentally corresponds to the commonly accepted economic concept of income (the amount that may be consumed or distributed during a period while leaving oneself as well off at the end of the period as at the beginning).

Appropriation Statement for Year ——

Accounting Profit		$..	Determined on the basis of historical values—balance transferred from Profit and Loss Statement
Less: Depreciation Adjustment	$..		Difference between historical-cost depreciation and current-cost depreciation.
Inventory Adjustment	..	..	Difference between historical-cost of goods sold and current-cost of goods sold.
Current Income		$..	Income available for distribution.

In this way it is possible to measure two concepts of periodic surplus in the accounting reports. It is emphasized that the adjustments made in the Valuation Adjustment Account are the only departures from conventional accounting practice. But it is suggested that these adjustments should be recorded as a routine accounting procedure, based on the objective measurement of differences between historical and current cost. They should not be regarded as discretionary or in any way dependent on financial policy.

If, in order to meet the different purposes of accounting, these two concepts of

Concepts of Funds Employed

The second major task in accounting involves the measurement of net financial position, and this requires the formulation of some concept of funds employed. In the case of a company, funds employed may generally be interpreted to mean shareholders' funds or net worth (equivalent to total assets *minus* total liabilities), but for some purposes alternative concepts may be required, such as total funds (equivalent to total assets); or shareholders' funds *plus* long-term liabilities (equivalent to total assets *minus* current liabilities).

This leaves unresolved the question of the valuation of assets and liabilities. Corresponding to the divergence between accounting profit and current income observed above, we may now distinguish between two concepts of funds employed, which we shall call historical funds employed and current funds employed.

The measurement of historical funds employed involves the valuation of assets and liabilities in accordance with conventional accounting assumptions. In measuring current funds employed, on the other hand, several procedures are possible. In this paper it is assumed that no adjustment is necessary in respect of money claims. It therefore remains to consider how physical assets, that is fixed capital assets and inventories, may be valued in terms of current prices.

The obvious course of action is to value all fixed assets and inventories in terms of their current replacement values. But, while this procedure results in an unambiguous concept of current funds employed and one which may be measured comparatively easily, it suffers from certain limitations. In particular, it is difficult to incorporate such a procedure into the double-entry framework, and the underlying concept of current funds employed is not really consistent with the concept of current income that I have formulated. If the recommended depreciation and inventory adjustments have been made throughout the period of the inflation, however, the resulting balance sheet value of shareholders' funds (which include the revaluation reserves established as a result of the adjustments) may be regarded as an approximate measure of current funds employed, one that is suitable for most practical purposes.

The Experience of Australian Companies in the Post-war Inflation

A research project in the University of Adelaide has made use of the concepts and procedures outlined above in order to measure the depreciation and inventory adjustments which should have been made by Australian non-financial companies in the aggregate during the period of the post-war inflation. From the resulting estimates of current income, taxes and dividends were deducted to derive measures of company saving in current terms, which could be compared with figures for undistributed profits (accounting profits *minus* taxes and dividends). The results are reproduced in Table 1.

From this analysis two important conclusions emerge. In the first place, it is apparent that accounting profits increased

TABLE 1

ACCOUNTING PROFITS, CURRENT INCOMES AND SAVINGS OF AUSTRALIAN COMPANIES—1945–46 TO 1952–53

£millions (Australian)

	1945–46	*1946–47*	*1947–48*	*1948–49*	*1949–50*	*1950–51*	*1951–52*	*1952–53*
1. Accounting Profits	134	164	197	221	273	420	377	268
2. Depreciation Adjustment	—	−1	−3	−5	−7	−12	−20	−21
3. Inventory Adjustment	−3	−14	−39	−43	−65	−140	−136	−27
4. Current Incomes	131	149	155	173	201	268	221	320
less:								
5. Taxes Payable	59	68	68	78	92	164	152	119
6. Dividends Payable	44	51	57	72	79	93	110	118
7. Current Savings (4-5-6)	28	30	30	23	30	11	−41	83
8. Undistributed Profits (1-5-6)	31	45	72	71	102	163	115	131

TABLE 2

AUSTRALIAN COMPANY FINANCE AND CAPITAL FORMATION—1945–46 TO 1952–53

£millions (Australian)

	1945–46	*1946–47*	*1947–48*	*1948–49*	*1949–50*	*1950–51*	*1951–52*	*1952–53*
Sources of Funds:								
1. Undistributed Profits	31	45	72	71	102	163	115	131
2. Depreciation Allowances	20	20	22	26	29	41	49	59
3. New Share Capital Raising (by Listed Companies)	7	10	19	30	33	67	57	27
4. Increase in Tax and Dividend Provisions	8	23	3	17	15	71	19	−38
5. Other Net Borrowing (+) Or Net Lending (−)	−18	15	40	11	10	0	189	−101
Total Funds Made Available	48	113	156	155	189	342	429	78
Capital Formation:								
6. Gross Investment in Fixed Assets	30	49	64	78	97	172	189	194
7. Increase in Inventories	18	64	92	77	92	170	240	−116
Total Capital Formation	48	113	156	155	189	342	429	78

at a much faster rate than current incomes. The discrepancy was due principally to the inventory appreciation effect, although the depreciation adjustment assumed greater relative importance as the inflation proceeded. Secondly, it is clear that, although the undistributed profits of companies rose substantially during the period, current savings declined and at the height of inflation (in 1951–52) became negative. As a result companies had to borrow heavily and raise fresh capital, not only to finance expansion but also to maintain existing quantities of fixed assets and inventories (see Table 2.). The financial position of Australian companies, measured either by the ratio of shareholders' funds to borrowed funds, or the ratio of long-term funds to short-term funds, deteriorated sharply during this period.*

The level of company savings ought to be high enough to preserve both earning power and financial stability. In the case of an individual company this means that its undistributed profits and depreciation allowances should at least be sufficient: (a) to finance the necessary replacement of fixed assets and inventories at current prices; and (b) to permit the accumulation of general reserves to the point where financial safety is reasonably assured in the face of unforeseen contingencies.

The company can estimate and carry out the saving necessary to achieve the first of these purposes by following the procedures suggested in this paper. It is difficult to generalize concerning the size of the reserves necessary to achieve the second purpose—this will obviously depend on many factors (such as the size, age, and rate of growth of the business, the nature of its financial structure, the riskiness of the industry in which it is operating, and the general state of the economy) which cannot be expressed in quantitative terms. Nevertheless, it is reasonably clear from Tables 1 and 2 that Australian corporate saving was not high enough during the period of the post-war inflation to permit the foregoing objectives to be achieved. Nor is it likely that they will be achieved during inflation, so long as income taxes and dividends are based on accounting profit figures. Distribution

* The full results of the research have been recorded in *Inflation and Company Finance*, by Russell Mathews and John McB. Grant (Law Book Co. of Australasia, Sydney, 1958).

policy in the firm must be determined by reference to some concept of current distributable surplus, such as current income.

The Basis of Tax and Dividend Distributions

Insofar as dividends are concerned, there is no great problem in basing distribution policy on current incomes. Dividends are under the control of company directors and shareholders; it is simply necessary for managements to make the recommended depreciation and inventory adjustments and for dividends to be calculated with an eye to the resulting figures for current incomes after tax. The problem with respect to income taxes payable by companies is more difficult, partly because the appropriate tax base is determined by the revenue authorities and not by the companies themselves, and partly because a change in the tax base may need to be accompanied by changes in tax rates to maintain the yield of company taxes. Nevertheless, it is no less clear that the capacity of companies to pay taxation can only be assessed by reference to their current incomes. This means that the revenue authorities should allow separate deductions for the depreciation and inventory adjustments in calculating taxable incomes. The amounts of these deductions could be controlled by the taxation authorities, should they so desire, if they were to publish annual indexes of the current costs of various classes of assets and require businesses to use these indexes for tax purposes. The amounts represented by the two deductions would be credited to tax-exempted reserves, which should be recorded separately in the balance sheet. If in a subsequent period current income should exceed accounting profit (due to a fall in the price level) the resulting transfers from the revaluation reserves would be taxable.

But in considering the relevance of accounting concepts to business policy it is not sufficient to confine attention to taxes and dividends. The Australian statistics merely suggest that taxes and dividends have been too high relative to accounting profits (and current incomes). This does not necessarily mean that taxes and dividends have been too high in absolute terms. Before we could reach any such conclusion it would be necessary to consider dividend rates of return and the yield of company taxes in relation to other forms of taxation. Institutional and other factors in Australia would undoubtedly have made it very difficult to bring about any substantial reduction in the overall level of dividends and company taxes during the period under consideration.

It is therefore necessary to examine the level of company profits and incomes as well as the distributions made therefrom. If company saving is inadequate, that is to say, and it is difficult to reduce taxes and dividends, we need to approach the problem from the other angle by looking at the level of company profits (and incomes). There are strong grounds for believing that, throughout the period of the post-war inflation, the level of profits and incomes in the Australian economy was too low.

Relationships of Periodic Surplus to Funds Employed

In examining this hypothesis it is necessary to use some objective test, such as the relationship of periodic surplus to funds employed. Unfortunately, the measure which is usually adopted in this regard, the ratio of accounting profits to historical funds employed, gives such a misleading picture of profitability during inflation that it must be regarded as a factor which itself contributes to inefficiency and low company profits. During inflation, accounting profits are greater than current incomes, and balance sheet values of as-

sets are less than current values, so that an apparently satisfactory profit/funds ratio may represent a quite inadequate return on the real funds employed by the company. The conventional profitability ratio may thus serve to mask the inefficient use of the company's resources, and profits may need to be substantially higher to justify the employment of funds in their existing uses. The recognition of this fact has undoubtedly been responsible for many of the take-over deals which have been a feature of the Australian economy —and other Western economies—during the post-war period.

What is necessary, if efficiency in the use of resources is to be achieved, is that there should be a satisfactory relationship between current income and current funds employed. This relationship, which we may also call the real earnings ratio, cannot be derived from accounting reports prepared on a conventional basis, and the estimates presented in Table 3 have been prepared from the same statistical sources used in the compilation of Tables 1 and 2.* It will be observed that, in striking contrast to the trend in the proportion of accounting profits to historical funds employed, the percentage of current incomes of Australian companies to their current funds employed fell substantially during the period in question.

This is an unexpected result for a number of reasons. In the first place, one would normally expect the real earnings ratio to show improvement after a prolonged period of war, when stringent price and profit controls were operating. Secondly, although the increase in short-term borrowing (which may be observed in Table 2) contributed to financial instability, it also raised the capital leverage of Australian companies and might therefore have been expected to increase the earnings rate on long-term funds. Finally, both turnovers and profit margins might have been expected to increase under the prosperous, not to say boom, conditions which prevailed in the Australian economy during the period. How then may the decline in the real earnings ratio be explained?

A possible answer, as we have seen, is growing inefficiency encouraged by the misleading impression of profitability that

TABLE 3

RATES OF RETURN ON FUNDS EMPLOYED BY AUSTRALIAN COMPANIES—1945–46 TO 1952–53

£millions (Australian)

	1945–46	*1946–47*	*1947–48*	*1948–49*	*1949–50*	*1950–51*	*1951–52*	*1952–53*
1. Current Incomes	131	149	155	173	201	268	221	320
2. Average Funds Employed (current values):								
(a) Plant and Machinery	179	192	233	273	318	494	622	724
(b) Land and Buildings	202	221	248	280	327	416	581	700
(c) Inventories	214	265	365	446	506	672	884	955
(d) Other Working Capital	120	101	60	24	−3	−50	−190	−224
Average Current Funds Employed	715	779	906	1,023	1,148	1,532	1,897	2,155
3. Current Incomes as a Percentage of Current Funds Employed	18.3%	19.1%	17.1%	16.9%	17.5%	17.5%	11.6%	14.8%
4. Accounting Profits as a Percentage of Historical Funds Employed	18.7%	21.6%	23.4%	24.0%	27.1%	32.7%	26.1%	22.4%

* Because separate figures for long-term liabilities are not available, the concept of funds employed which is measured is equivalent to shareholders' funds plus long-term liabilities.

is given by accounting reports drawn up along traditional lines. But this would hardly seem a sufficient explanation for such a general and pronounced trend. A more probable cause of the fall in the real earnings ratio of Australian companies was, I suggest, inappropriate pricing policy, reflecting a failure to adjust revenues in response to the increase that was occurring in current replacement costs. We must therefore turn to the problem of pricing policy. By means of an arithmetical example in Table 4 it is shown that, other things equal, a stable real earnings ratio can only be achieved if prices are determined by adding a constant margin (in this case 50 per cent) to current costs.

TABLE 4

CURRENT INCOME AS A PERCENTAGE OF CURRENT FUNDS EMPLOYED UNDER ALTERNATIVE PRICING POLICIES

	Year 1		*Year 2*					
	All Methods		*Current-cost Pricing*		*Historical-cost Pricing*		*Average-cost Pricing*	
Sales (100 units)		$150		$180		$150		$165
Less: Cost of Goods Sold								
Opening Inventories (100 units)	$100		$100		$100		$100	
Purchases (100 units)	100		120		120		120	
	200		220		220		220	
Closing Inventories (100 units)	100	100	120	100	120	100	110	110
Accounting Profit		$ 50		$ 80		$ 50		$ 55
Less: Inventory Adjustment		—		20		20		10
Current Income		$ 50		$ 60		$ 30		$ 45
Current Funds Employed		$100		$120		$120		$120
Current Income as a Percentage of Current Funds Employed		50%		50%		25%		37.5%

The Basis of Pricing Policy

Alternative pricing policies, which we may call respectively "historical-cost pricing" and "current-cost pricing," should be distinguished. Historical-cost pricing involves the determination of prices by adding a constant margin (absolute or percentage) to the historical cost of goods sold. Current-cost pricing occurs when prices are determined by adding a constant margin to the current cost of goods sold. Adoption of the first-in-first-out method of inventory valuation is assumed to give the historical cost of goods sold, while current cost may be determined in accordance with the procedures suggested above (the last-in-first-out assumption will of course provide approximately the same cost figure). If an average-cost assumption is used for purposes of inventory valuation, the cost of goods sold figure will be somewhere between historical cost and current cost, and a third pricing policy, "average-cost pricing" needs to be distinguished.

All available evidence suggests that Australian companies seldom adopt current-cost pricing. The methods of inventory valuation predominantly in use are first-in-first-out and average-cost, so that where prices are determined on the basis of recorded cost figures a current-cost policy is unlikely to be followed. This conclusion is reinforced by the fact that cur-

rent costs have never been accepted in Australia by taxation or price control authorities.

However, it is clear from Table 4 that any departure from current-cost pricing, in the direction of historical-cost pricing or even average-cost pricing, will cause a decline in the real earnings ratio. Inappropriate pricing policy therefore provides a reasonable explanation of the adverse trend in the ratio of current income to current funds employed which was observed in Table 3. Moreover, it is apparent that unless taxes and dividends are actually reduced in absolute terms, failure to adopt current-cost pricing during inflationary periods will involve financial deterioration of the kind experienced by Australian companies during the period under review.

Prices should thus be related to current costs. Even where prices are not primarily cost-determined, they must be high enough to maintain a satisfactory relationship between current income and current funds employed. In other words, supply prices must be based on current costs.

Conclusion

To maintain financial stability as well as a satisfactory level of profits and incomes, it is thus necessary, first, to adopt a policy of current-cost pricing and second, to base tax and dividend distributions on current incomes rather than accounting profits. In other words, the increase in profits which results from current-cost pricing must not be distributed, but should be added to reserves by making the depreciation and inventory adjustments that have been outlined in this paper.*

Paradoxically, the adoption of current-cost pricing, combined with distribution policies based on current incomes, may be expected to damp down inflationary pressures in the economy at large. Many writers have suggested that conventional accounting procedures contribute to the severity of the trade cycle, but they have usually concentrated their attention on investment aspects of the problem. Since, however, inappropriate pricing and distribution policies combine to shift real incomes from companies to consumers, with a consequent decline in real company saving and an increase in real consumption, the trade cycle effects of conventional accounting and pricing policies operate mainly through the saving side. Conversion to current-cost accounting and pricing will tend to restore the pre-inflation pattern of consumption and saving, so that company saving will at least be high enough to finance the whole of their replacement investment and the inflationary consequences of conventional policies will be avoided. But this is a subject that cannot be explored fully in this paper.**

* It can be demonstrated mathematically that the size of the increase in profits, resulting from a shift to current-cost pricing, is approximately the same as the size of the required depreciation and inventory adjustments. See J. McB. Grant and R. L. Mathews, "The Effect of Inflation on Company Profits and Financial Structures," *The Economic Record*, No. 62, 1956.

** For a fuller discussion of this problem see *Inflation and Company Finance* (*op. cit.*), Chapter XI.

A REVIEW OF DEVELOPMENTS IN STATISTICAL SAMPLING FOR ACCOUNTANTS[1]

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Statistical sampling methods for accountants and auditors have been actively discussed for about 12 years. A substantial amount of experimentation has been carried on during this period, and a considerable number of successful applications have been described in print. It is the purpose of this paper to review what has been done in a somewhat summary fashion, to describe with cases three of the important applications, and to report such trends as are discernible. The material is drawn almost entirely from published sources.

Something of the extent of interest in the subject can be seen in the bibliography recently made available by the American Institute of C.P.A.'s.[2] The bibliography covers the period from the inception of articles on the subject to August 31, 1958, and is labelled selective, not exhaustive. Nevertheless, 118 articles in periodicals and 15 papers in pamphlet or other special form are listed. Almost all these deal with accounting or auditing uses of statistical inference. Among the books listed, three deal entirely with the accounting and auditing applications and are currently in print.[3] Another indication of the extent of interest in the subject is the fact that the American Institute of Certified Public Accountants has appointed a Committee on Statistical Sampling that is now approaching the end of its third year. The Committee has collected literature, including cases, and has discussed the subject at length, but has not at this writing arrived at the point where it feels that a general statement on the desirability of using statistical methods in accounting and auditing should be made. It has, however, issued the bibliography mentioned above which is accompanied by a glossary of statistical terms for accountants. The two are bound together and are intended to assist accountants in becoming more familiar with statistical methods.

Let us turn to the subject matter with which this growing literature is concerned. The subject matter is divided into two major areas: acceptance sampling and estimation. To these there has been added a third that is of special current interest to auditors; it is called discovery or exploratory sampling. In estimation one samples a population and estimates some quality or quantitative value of the population from the sample. This is done with a degree of precision and on a level of confidence that can be specified in advance if desired. In acceptance sampling a population or lot is accepted or rejected after a sample from it is examined. The acceptance or rejection is made on the basis of a prearranged level of quality and with a degree of confidence or risk that can also be set in advance. Discovery sampling is a procedure by which one can draw a sample

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[1] This paper was presented at the annual meeting of the Association at the University of Colorado on August 25, 1959.

[2] *Glossary of Statistical Terms for Accountants and Bibliography on the Application of Statistical Methods to Accounting, Auditing and Management Control*, September 8, 1958, AICPA, 270 Madison Ave., New York 16, N. Y.

[3] Curtis, C. R., *Statistics as Applied to Accounting Data*, Sweet & Maxwell, London.

Trueblood, Robert M., and Cyert, R. M., *Sampling Techniques in Accounting* (1957), Prentice-Hall, Inc., Englewood Cliffs, N. J.

Vance, L. L., and Neter, John, *Statistical Sampling for Auditors and Accountants* (1956), John Wiley & Sons, Inc., New York.

with specified assurance of obtaining in the sample at least one example of a certain class of the population. Major applications and possible applications of these techniques may be listed as follows:

Estimation:
1. Estimation of inventory amounts.
2. Estimation of inter-company receivables and payables.
3. Estimation of percentage of error.

Acceptance sampling:
4. Clerical quality control.
5. Examination of incoming documents such as suppliers' invoices.
6. Sundry internal and external auditing applications.

Discovery sampling:
7. Sundry internal and external auditing applications.

Note that five of these seven applications are accounting applications and are part of the regular process of constructing and maintaining accounts. Two of the applications, one of acceptance sampling and the discovery sampling technique, are primarily auditing applications. This classification must not be insisted upon, however, for all the techniques can be used as a part of the accounting process or by auditors in checking the accounting product. I offer it only to emphasize the fact that statistical sampling methods are useful in regular accounting as well as auditing. The point that the same technique can be used either in accounting or in auditing may be observed if we notice that auditors as well as accountants have used estimation procedures in inventory verification, and accountants have used acceptance sampling to check on the performance of workers preparing accounting data. The only difference between the accounting and auditing application may be the timing of it, and even this may disappear when an auditor observes the taking of physical inventory.

The applications are more meaningful when viewed in the context of specific cases. Let us review some recent cases illustrating the use of statistical estimation. We may remind ourselves in beginning this that when we estimate an average value or a total value for a population from a sample we can add some very important information about the estimate if we have used statistically sophisticated procedures. We can estimate the standard deviation of the population from the evidence in our sample, or we can obtain other data on it. Having it, we can calculate the limits within which we can reasonably believe our estimate will fall any given percentage of the time. In other words, we can calculate confidence limits. These give a range of values about the estimate, the width of the range being associated with particular probability levels, or levels of confidence. With this kind of information we can determine whether or not the estimate is likely to be as close to the population value as we wish, considering the costs of making it better. Furthermore, if we have some prior knowledge of the kind of population we are sampling, or if we take a preliminary sample to get information about the population, we can determine in advance the size of a final sample needed to give us the precision we desire.

Minneapolis-Honeywell Case. An outstanding case in which statistical estimation was used to establish an inventory figure for regular accounting purposes is the Minneapolis-Honeywell Case. The case concerns the work in process inventory of one division of the company. This inventory contains about 40,000 lots located in several departments. The lots differ considerably both physically and in cost. Less than 2% of the lots cost over $1,200 each, but this 2% accounted for 30 per cent of the total cost of the inventory. In order to satisfy themselves of the validity of the

statistical method and to gain experience in its application, the people involved ran experiments for three years before using the method as a substitute for a 100% count. The first experiment consisted of taking a random sample of about 500 out of 5,000 items in one department. The sample was taken from lot tags used in the regular physical inventory of the department. Since the sample was 10% of the population the inventory cost of the sample items was multiplied by 10 to get the estimate of the total cost of the inventory of the department. This total came within 1/10 of 1% of the physical count. The experiment was repeated the next year with another satisfactory result. At this point the plan was revised to take into account the fact that the inventory could be divided into high value and low value lots, i.e. stratified. High value lots were defined as those costing $500.00 and over. The plan then provided for counting the high value lots 100%, and for a sample of about 10% of the low value lots. When this was applied in a third experiment the sample consisted of 4,200 items out of a total of 40,000 items. The estimate this time was within 8/10 of 1% of the physical count figure. Both these percentages represent a high degree of precision and so were considered satisfactory. The experiments had been done on the basis of documents from the physical inventories, and it remained to be seen if they could be successfully applied in the shop. Problems common to all physical inventory taking were involved: how to identify lots and segregate them for counting, for example. In addition, high and low value lots had to be distinguished and means of drawing a random sample of the low value lots had to be devised and applied on the floor of the working areas. A test of the procedures devised for these possibilities proved successful and authorization was given for applying the method to an actual inventory determination. Instructions were prepared, forms designed, personnel selected and trained, and the whole process scheduled. The physical inventory as usually taken on a complete basis required five working days. The statistical plan called for the whole job to be done in one continuous 16 hour period. When it was carried out it was completed in many departments in 8 hours, and was completed in all at the end of the planned 16 hours. Some of the more technical steps in the application are illuminating. These are discussed under the headings of Segregation, Sampling and Counting, and Quality Check.

Segregation. A catalog that listed in numerical order all the parts, assemblies, and products at various stages of completion was used to identify high value lots by inserting after each item the quantity necessary to place the item in the high value category. The foreman of the department checked all bins, skids, and crates in his department. He estimated the number of items in the lot and if this number put the lot in the high value group he tagged it with a large red card. He also placed masking tape across the crates or other containers in the lot to indicate what the lot included.

Sampling and Counting. The inventory crew counted all the high value items and, in this case, 10% of the others. The items sampled were selected by placing identification slips on the lots. The slips were arranged in groups of 20, and for each 20 there was a sealed envelope containing two numbers from 1 to 20 preselected from random tables. When the sealed envelope was opened the inventory crew found which two lots in the 20 it had tagged were to be counted.

Quality Check. The two numbers were identified as an "x" and a "y" number so that two 5% samples could be identified later as the "x" and the "y" sample. Each of these could be used as an estimate of the

total inventory of low value lots and from their divergence something of the accuracy of the estimate could be obtained. The work was also checked by the accountants as it progressed to see that the steps were being taken in the prescribed order, and that the instructions generally were being carried out. After the whole inventory was counted, a separate crew of quality control personnel selected a random sample of 30 of the lots counted by the inventory crew and counted them over again. If errors disclosed in this audit exceeded a prescribed limit the inventory in that department was redone.

The plan just described was devised, in its final version, to give an estimate of the total inventory within about 0.4% of the actual value. This figure was derived from the fact that they did not want to be more than $250,000.00 off. The level of probability, or risk of error, on which this estimate was to be made was set at 0.0027, or 27 chances in 10,000 of being outside the prescribed maximum $250,000.00 error. To put it another way, the plan provided 99.73% confidence that the estimate was within ±$250,000.00 of the actual total cost. The sample size was derived from standard sampling formulas by means of these specifications and the advance information the company had in its prior inventory records of the variability of the population. The company recorded the inventory figure arrived at by this plan and has continued to use and to extend the method. A representative of the company has cited the following advantages:

1. Greater accuracy.
2. Known limits of error.
3. The ability to take inventory at any time of the year to coordinate with the accounting record (it had previously been taken at plant shutdown time).
4. All vacation schedules can coincide with the plant shutdown.
5. Lower total cost to take inventory.[1]

The additional accuracy referred to is based on the fact that human errors in a long and tedious count often exceed the sampling fluctuations or error inherent in making estimates from samples.

Esso Research and Engineering Case. This company has two storehouses, one with 3,900 and the other with 800 items. The total cost of the inventory is just over $300,000. Adjustments to the perpetual inventory records made after the annual physical inventory ranged from $260 to $1,339 credit for one storehouse and from $494 credit to $209 debit for the other during the five years prior to the company's use of statistical methods. The regular annual physical inventory required 360 overtime man-hours in the storehouses and 240 man-hours of clerical work. In view of the fact that adjustments had been small in the past it was thought that a statistical estimate would work well, so it was used. The statistical plan had three objectives:

1. It had to give an unbiased estimate of the results obtainable by a complete count.
2. It had to give an indication of the sampling error of the estimate.
3. It had to be in accord with sound auditing principles.

The first two objectives are well known characteristics of adequately designed statistical sampling plans. The auditing acceptability of the method has been under some debate in view of language in the American Institute's *Codification of Statements on Auditing Procedure* that some were inclined to interpret as implying that a physical inventory had to be a 100% count. However, the words in question were evidently written without the possibility of statistical sampling in mind and in view of the many ways in which estimates, including quite unscientific ones,

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[1] Rudell, Allan L., Applied Sampling Doubles Inventory Accuracy, Halves Cost, *Bulletin* of the N.A.A., October, 1957.

enter into the auditor's verification of inventory figures in current practice, it is doubtful that a prohibition of statistical estimates as a basis for a physical inventory procedure can be read into the Codification.

In the case at hand certain considerations led to the use of a stratified sampling plan. These were:

1. Certain items such as scissors were peculiarly subject to shrinkage and they were to be counted 100%.

2. In general, as small a sample as possible was wanted for economy.

3. Since it was a first sample it was desirable to get as much information about the statistical character of the population as possible, so, in some areas, a larger sample than was needed for the basic purpose was wanted.

The final sample design actually yielded, on a 95% confidence level, the following precisions:

	Large Storehouse	*Smaller Storehouse*
Adjustment required per the estimate	\$1,105 credit	\$319 credit
Range of precision	±\$1,300	±\$600

This means that, if the same plan had been applied many times to the same situation, the estimate for the large storehouse could be expected to fall between \$2,405 credit and \$195 debit in 95% of the trials. Similarly, the estimate for the small storehouse could be expected to fall between \$929 credit and \$271 debit 95% of the time.

Operation of the Sampling Plan

The two storehouse populations were divided into 5 strata each. With the exception of the first stratum (items with zero balance) and the last one (items peculiarly subject to shrinkage), on which extra information was wanted, the strata were based on the size of unit cost of the items.

The stock is recorded on punched cards and these were sorted into the predetermined strata. One serially numbered card was inserted ahead of each stock card as a means of identifying the stock card when the sample was pulled. The number of items to be sampled in each stratum was determined by means of statistical formulae (increased where extra information was desired). Then random numbers from a table were taken in a quantity needed to select the number of cards specified by the sample size. These numbers were punched into cards. By use of a collater these cards were used to pull out the stock cards corresponding to the random numbers. These items of stock were counted and the adjustment required for each item computed. The net total adjustment for each of the storehouses was then calculated by increasing the adjustment found in the samples in the ratio existing between the size of each sample and the total number of items in its stratum, and by combining the results for all strata. This was the statistical estimate desired, and it was debited to expense and credited to "Inventory Shrinkage" account, the latter being a valuation account against the inventory. The latter account is debited or credited during the year when adjustments to individual stock accounts are found necessary.

Results of the Plan

The sampling plan gave an estimate within the range planned for, which was of course considered sufficiently narrow for accounting purposes.

It is estimated that the procedure will ordinarily require about 300 straight-time manhours. This is a saving of about 320 overtime hours.

A question arises in the fact that the first application of the plan applied to stores accounts that had been adjusted 100% to a physical inventory at the beginning of the prior year. Future estimates would not be based on this condition. This

should not have an important effect on the results; its chief effect being to suggest some alteration of the relative size of samples in the several strata, and this can be done each year on the basis of the last year's sample data.

The company is pleased with the results and expects to extend the method to other accounting areas.

Auditing Considerations in the Case

The case poses these questions for the auditor:

1. Is the method of taking this inventory acceptable for use in financial statements?

2. Is the auditor competent to observe and review the inventory taking and to express a professional opinion on it?

The present reporter suggests the following answers to these questions:

Where a method is used that is based upon scientific procedures, designed to give results with a specified degree of accuracy, and these results can be checked with the data obtained in the actual application of the method, generally accepted accounting methods should embrace this procedure. Estimates of other sorts are used in accounting, and this type of estimate is supported by especially well developed mathematical theory.

In a period of increasing technical development the accountant needs to be familiar with the principles of statistical sampling. Personal competence is peculiar to the individual, but it should be presumed that statistical sampling is a tool with which the accountant should expect to work. This is not to say that the accountant should be qualified as an expert statistician any more than his examination of an inventory of coal requires him to be an expert in minerals. The accountant should be familiar with statistical principles in order to review a statistical plan, to discuss it with a statistician if need be, and accountants should therefore be encouraged to familiarize themselves with the principles of statistical sampling.

The procedure of the auditors of the company discussed in this case is recommended in this connection:

1. The plan evolved by the company was reviewed in advance of its use to satisfy the auditor that it was properly designed to give satisfactory results. This included the degree of precision and confidence coefficient selected.

2. The procedure of selecting and counting the stock items for the same was observed.

3. Cut-off procedures were reviewed.

4. The client's summarizing process was checked. In this case this involved checking the calculation of the estimate.

5. The precision achieved by the actual sample was computed. This is done with statistical formulas.

6. Acceptability of the precision actually achieved in the light of the confidence coefficient associated with it was finally determined.

Estimates of Inter-company Receivables and Payables

Another area of application of statistical estimates as a substitute for full accounting calculation is the settlement of inter-company receivables and payables. This has been accomplished by some of the air carriers, who have thousands of inter-line revenue allocations to make each month. The case I will describe is the one first adopted by TWA, United, and Northwest airlines, and which has now been incorporated in the Revenue Accounting Manual of the International Air Transport Association for use by any airlines that wish to join with others in using the statistical method. The problem of interline revenue settlements is a substantial one and is growing larger. For example, United Air Lines picks up over 100,000 coupons per

month from tickets sold by other airlines. Furthermore, there are more than 60 possible fares for a trip from Chicago to New York, to take a single case. The cost of pricing a monthly bill from United to TWA involving 20,000 coupons valued at $600,000 is $1,500.00. In discussing the possibility of solving the rising clerical cost of this operation by statistical sampling it was decided that the sample should provide an estimate within $\pm 1\%$ of error for a cumulative six-month period. It was also decided that this precision was to be achieved on a confidence level of 95%. In other words, a 5% risk of being wrong was taken. A stratified sample of the coupons is taken, the strata being first class, coach, military, and others. The sample is selected by taking a number from 1 to 10 at random and picking the coupons that have this number as the last digit in the ticket number. In the cast of small lots, if this digit does not occur frequently enough, the next higher one is used, and so on. Then the tickets selected for the sample are priced in the usual way. This total is then multiplied by the ratio of the sample size to the total lot size and this estimate of the total amount due on the whole batch of tickets is billed to the airline that sold the tickets. The tickets are sent to the other airline so it can check the computations made. But no one checks the tickets that are not included in the sample. A representative of United estimates that in a year's billing of $7,000,000 the error will be plus or minus $3,400.[2] In United's case the yearly cost of billing one carrier on the old basis is $15,000, so the saving is substantial. This method is also used by a number of international air carriers.

Estimation of the Per Cent of Error

An application of statistical estimation of use to internal and external auditors is the estimation of the per cent of error. In a large organization this gives an opportunity for comparison of clerical performance in various units doing similar work. It also gives a quantitative indication of parts of the work where internal control is weak. Perhaps the most extensive work with this application has been done in the internal auditing of the U. S. Air Force. The Air Force Auditor General and his staff have auditing responsibility for 300 Air Force bases, 20 Air Materiel Areas, and 500 other installations. The Auditor General has 2,500 people assigned to him for this job. From June 1955 to the middle of 1958 the Air Force had applied statistical techniques in five audit programs, as follows:

1. A preliminary test of one Air Materiel Area, one Air Force depot, and two Air Force bases. The subject matter covered was supply vouchers for a six month period.
2. Military payrolls were audited at 48 bases.
3. Inventory transactions were tested at 19 bases.
4. The adequacy and accuracy of shipping and receiving functions were tested at 15 Air Materiel Areas and Air Force depots. This audit resulted in the preparation of a comparative, command wide audit report.
5. An annual audit of the world-wide motor vehicle physical inventory was made with statistical methods.

All of these audits were directed at determining the accuracy of the accounting or supply records. As a more detailed indication of what was done, let us examine the audit of the shipping function. The objective was to determine the efficiency of off-base shipment operations at each of the major depots during the then most recent complete month of operations.

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[2] Dalleck, Winston C., "Inductive Accounting—An Application of Statistical Sampling Techniques" in *Operations Research Applied, Special Report No. 17*, American Management Association, New York.

The population involved was the off-base shipment vouchers. Each base kept a register of these vouchers. The audit was limited to the first line item shown on each selected voucher. Eleven items were designated for testing, such as extent of back orders, extent of missing records, discrepancies in prices and so on. The auditors planned to calculate error rates for the different items and wanted to estimate these rates within 3 percentage points. They were willing to take a sampling risk of being outside this limit 5% of the time. The number of vouchers at the different locations varied from 12,000 to 232,000. Statistical calculations gave a sample size of 203 at each installation, which was raised to 224 to make use of the time allotted and to improve the results. The following conclusions about the audit results obtained have been reported:

1. Audit reports were improved; they tended to highlight hitherto unexplored areas. Previously the auditors had believed that back-order rates as well as other deficiencies were negligible, at most 5%, but this audit revealed that back-order rates were 3.2 to 31.4%, with most of them far over 5%.
2. Uniform results were obtained at different bases with different personnel.
3. Comparatively small samples may be very efficient. Some doubted the validity of a sample of only 224 from populations of 12,000 to 232,000, but increased samples sizes only confirmed the earlier results.
4. Field testing of a centrally directed audit program is vital.
5. The principles and procedures of statistical sampling were readily understood, and once understood, very well received.
6. Statistical sampling assists materially in the integrated audit approach.
7. Larger installations do not necessarily require significantly more time than smaller ones where statistical methods are appropriate.[3]

Acceptance Sampling

The foregoing cases are all illustrations of statistical estimation. Let us turn for a moment to acceptance sampling, which proceeds on the same principles but has as its object the making of a decision instead of an estimate. It has uses in regular accounting that offer substantial savings. One is the area of statistical quality control of clerical work. The method may be applied to the work of one's own personnel, as when a test is made of outgoing invoices or of inventory counts. Another application may be made to incoming invoices, thus eliminating a great deal of checking of individual bills. Wherever a mass of documents or physical objects is to be examined and some characteristic of quality estimated, or a decision is to be made accepting the lot as satisfactory or rejecting it as bad, statistical methods will save work. They can be applied to give specified precision and specified risks of error here as in the estimating procedure.

Discovery Sampling

The most recent suggestion for new statistical tools for the auditor has been called discovery or exploratory sampling. In this the sample is designed to give a specified assurance—say 99 chances in 100—that it will contain one example of a specified class, assuming that class to exist in the population. For example, one might wish assurance that a set of vouchers contained not more than 2% of vouchers with an error of $10 or more each. This sampling procedure gives the auditor the specified assurance that he will see such a voucher if in fact there are 2% of these in the popu-

[3] Schwartz, Milton A., and Teitelbaum, Louis N., "Practical Improvements in Audit Testing," *The Federal Accountant.*

lation. This method is evidently still in the proposal stage.

Current Status of Statistical Methods in Accounting and Auditing

It is time for a summary of the present status of statistical sampling in accounting and auditing. First, as to accounting. Here the progress is much greater than in auditing. Prominent companies have taken advantage of the method to reduce clerical and similar time. The idea that accounting information does not have to be 100% accurate, and, in fact, seldom is anyway, has gained widespread recognition. People in administrative positions are accustomed to working with approximations and estimates so the fact that statistical methods give results only within a specified range does not deter them. The facts that the range can be specified in advance and that the precision desired can be planned in relation to its cost when one uses statistical methods are of course very attractive advantages. The national public accounting firms have in most cases hired statisticians and mathematicians for their management advisory services, and are actively working with clients in the use of statistical methods as well as with operations research methods generally. One cannot say that applications are widespread as yet, but they are numerous and growing rapidly.

As to auditing, there has been substantial experimentation but very few firm conclusions. The committee on statistical sampling of the American Institute of Certified Public Accountants has been active, and various of its members have conducted experiments in their own practices. Up to the time of this writing it has not been willing to express any recommendations or conclusions, but it should be able to do so soon. Auditors have so far been unwilling for the most part to use regular acceptance sampling in their work because it sets up a yes or no decision that they dislike. Part of the difficulty is that mathematical standards of quality in accounting populations are not established. One does not wish to decide definitely that a group of documents or entries is unsatisfactory because it evidently has more than, say, 4% defectives, if he is not sure that 4% of defectives is really unsatisfactory. The result has been for the auditors who are working most actively with statistical methods to turn to the estimation technique. With this one can see what the proportion of defectives is and then decide what to do about it. One can also estimate the amount of inventory, the amount of accounts receivable over 30 days old, and so on, and compare these results with the company's statements. This avoids the need to construct an objective standard of accounting quality that can be applied with the acceptance sampling procedure. My own feeling, which no doubt is biased, is that this difficulty will be less as time passes and auditors get more experience with the estimation of error rates. Out of such experience some basic standards of accounting quality should become evident.

There has also been some concern among auditors on the question of whether or not a statistical estimate, made by the client as a substitute for a 100% physical inventory, for example, is acceptable accounting. Concern over this score was felt in the Minneapolis-Honeywell and Esso Research and Engineering cases. Further acquaintance and better understanding of statistical methods should remove this fear. Statisticians have often pointed out that a well designed and administered statistical sampling plan will frequently give better accuracy than a full count. The reason is that the full count is subject to error also, but to errors that cannot be calculated in advance. Any accountant who

has a variety of experience with physical inventory taking should be able to appreciate this point. Furthermore, we have come to realize that there is little use in obtaining a perfect physical inventory while living happily with rough estimates of depreciation, allowances for doubtful accounts, and even tax liabilities, not to mention the price level problem. I expect therefore that auditors will recognize the validity of scientifically constructed estimates of accounting figures.

As to discovery sampling, nothing can be said as yet that is based on any substantial experience. On an *a priori* basis the writer is doubtful of its usefulness. If the specified class from which the auditor wishes to have an example is in the nature of rare events, such as gross error or fraud, sampling will not offer an economical means of finding the example. If it is not a rare event, then it can be approached better, one would think, by a method that gives an estimate of the extent of the specified condition. If one knows only that it exists as a result of seeing one example he is almost certain to feel the need of more information. However, the method has been suggested by thoughtful people; time will tell if auditors take to it.

As a short run prediction I am confident that statistical estimation techniques will grow in accounting and will be increasingly used in auditing. Acceptance sampling techniques will be used increasingly in clerical quality control and as a substitute for 100% checking of documents received from others. As a longer run prediction, I expect that increasing experience with estimates of error rates will lead to some use of acceptance sampling procedures in auditing.

FAULTY ADVICE ABOUT STATISTICAL SAMPLING—SOME COMMENTS ON "A SIMPLIFIED STATISTICAL TECHNIQUE FOR USE IN VERIFYING ACCOUNTS RECEIVABLE"

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A RECENT article in THE ACCOUNTING REVIEW[1] makes a commendable effort to simplify statistical sampling procedures for use by accountants and auditors. Unfortunately it contains a number of mistakes and misunderstandings which seriously limit its usefulness. Indeed, some of them may have harmful effects on the work of auditors who attempt to follow the examples and advice given in the article. Moreover, they will hamper the development of valid procedures based on statistical principles and produce unwarranted prejudice against them. It seems necessary to issue a note of warning to those readers of THE REVIEW who have not already discovered the serious flaws in a well-intentioned attempt to make statistical sampling easier to apply.

Sample Size

The difficulties begin on page 548, where Exhibit 1 sets forth a relationship between the degree of internal control and the values of a variable designated as "A," derived from a table of the normal probability function. A footnote refers to a table of the normal curve in a well-known statistical textbook as the source. Since nothing further is given by way of explanation, a reader may infer that statisticians have established a relationship between internal control and probabilities. Though such a relationship is needed greatly, no statistician I know has established it, and published his results. It is doubtful that the relationship can be established in any valid manner as simple as Exhibit 1. Readers should recognize the fact that the relationship shown in Exhibit 1 is essentially an arbitrary judgment by the author, not a tested statistical or accounting principle.

Exhibit 2 offers "correction factors for small populations." Statisticians have no such factors. They do use a factor, unfortunately called a correction factor, as part of a formula for the variation of samples that constitute more than an insignificant fraction of the population from which they are drawn. It is the *fraction* of the population drawn to be the same, not the *size* of the population, which is taken into account by this factor. Perhaps it was a misunderstanding of this distinction which led the author to refer to samples that are 100 per cent *or more* of the population, to regard them as a problem, and to suggest relaxing standards by (*a*) increasing the rate of error to be tolerated and (*b*) reducing the range by circularizing all the larger accounts. I know of no reference to samples of more than 100 per cent of the population in the literature of statistics.

This confusion about sample size continues through the article. For example on page 552 it leads to a sampling plan calculated to require 537,289 accounts to be drawn out of a population of 20,000 accounts. "To overcome an excessive sample size the accountant" may "decrease the

[1] Ridilla, Richard A., "A Simplified Statistical Technique for Use in Verifying Accounts Receivable," THE ACCOUNTING REVIEW, October, 1959, pp. 547–554.

degree of precision expected from the statistical sample." "The accountant concludes that he would increase the acceptance tolerance from 2 per cent to 3 per cent and try again for a more reasonable sample size." Another remedy may be sought in the stratification of the population, but some doubt of the feasibility of this step is expressed: "Practically, it may be too burdensome to stratify the accounts as has been done in this illustration. If this is true, the only way to prove the control balance without accepting a great range of error would be 100 per cent circularization" (page 553). Even this suggestion of a 100 per cent sample (20,000 accounts) does not pierce the confusion to reveal that something is wrong with the thinking which led to a sample size of 537,289 in the first place.

To correct the misunderstanding of the factors given in Exhibit 2, one must start back of the equation for n on page 550 and reintroduce these factors in the expression from which the equation was derived. The resulting equation can be solved readily for n, the size of sample *estimated* to suffice to meet the requirements. (This estimate, of course, is only approximate.) When this is done the equation for n is

$$n=\frac{Nu}{N+u-1}$$

when u is the number erroneously given by the equation for n as printed in the article and N is the size of the population.

The uses of the "correction factor" made in the article are incorrect. It should not be applied after an estimated sample size has been computed but incorporated beforehand into the computation of the sample size itself as explained above. When this is done one obtains 169 instead of 182 as the size of sample for Illustration 1. The result is not negligibly different. One obtains 19,273 for Illustration 2 before it is stratified. This is a large sample but it is not larger than the population. When the finite sampling factor is used properly there is never any occasion to puzzle over a sample larger than its population.

Applying the Results of the Sampling

After the sample size is determined and the sample drawn and examined, the results must be studied and conclusions drawn from them. The author states that first one should calculate the average balance in the accounts confirmed. "This average balance must then be multiplied by 500 (the total number of accounts). The grand total amount should fall between \$171,000 and \$179,000, thus verifying the control account of \$175,000 ± \$4,000 with 80 per cent accuracy. If the total obtained in this manner falls outside the tolerance limits of \$171,000 and \$179,000, more error exists than the accountant was first willing to accept as immaterial, and additional procedures must be applied. And it is possible that more tolerance may be accepted. . . . As long as the corrected average amount of all the accounts verified multiplied by the total number of accounts falls within the acceptable tolerance range, the control account is assumed correct at \$175,000 and there exists no material difference between the detail and the control account balance."

The suggestion that the tolerances or acceptable amount of error should be increased is questionable. While the original determination of tolerances may have been unduly strict, one should not abandon them merely to make his work lighter. To do so is equivalent to lowering one's standards or to revising arbitrarily one's judgment of the extent of internal control.

The passage just quoted makes no distinction between tolerance limits and limits of immateriality. Tolerance limits should be set by considerations of both (a) risks due to sampling variability and (b) materiality. In the first example, error

in the control amount of $175,000 is regarded as immaterial if it does not exceed $4,000. There is no discussion of how much risk one would accept that there is an actual error of more than $4,000 which is not revealed by the test. For example, if there is an actual error of $5,000 the probability is about 38 per cent that the grand total amount estimated from a sample will be between $171,000 and $179,000 and hence that the control account will be assumed correct. For an error of $8,000 there is about a 10 per cent risk of accepting the control account as correct. Are these reasonable risks to take? Statistical principles do not answer this question. It requires the informed judgment of the auditor who must determine the degrees of risk for various amounts of material error that are consistent with accepted accounting standards. Tolerances can then be set by statistical principles to assure that the risks taken in the sampling do not exceed those judged to be acceptable.

Reducing the Size of the Sample

Statisticians have developed several improvements in sampling technique which increase the accuracy of a sample of a given size or increase the efficiency of sampling in other ways such as reducing the cost of attaining a desired degree of accuracy. The article utilizes one such technique, stratification, but here again there are several flaws. First, the processes of stratification of a population are not revealed clearly by the examples or the discussion. Actually stratification is quite simple in concept. It consists merely of dividing a population into parts and then treating each part as a separate population to be sampled. The gains from stratification come from the reduction of variation within parts by grouping into each part accounts that are similar in size (or any other variable that may be studied). The sample may be drawn from each part in proportion to its size or in other proportions that may reduce the variability of sample estimates. In fact an "optimum" allocation of the sample size to the several parts or strata can be calculated. It is best in the sense that it minimizes the variability of the estimates that are obtained from samples drawn from the stratified population using the same allocation and procedure.

The allocation of the sample in Illustration 2 is unusual. It takes 11 per cent of the fifth stratum, 41 per cent of the first and fourth, 18 per cent of the third and only 5 per cent of the second. While the average balance for this sample is almost the same as the average balance for the entire population, this occurs almost by coincidence. There is no statistical principle which insures this; other examples treated by the same procedure could show average balances quite different from the population average. A somewhat different stratification of this example could likewise lead to a seriously erroneous estimate. The method of forming estimates of the control balance by multiplying the same average by the number of accounts in the population is inefficient and misleading for such samples. A statistician would first form an estimate of the portion of the control balance in each stratum and then combine these estimates to obtain an estimate for the entire population.

In the actual example, this procedure of computing the estimates permits one to take all the accounts in the first four strata and also some of those in the fifth, thereby confirming a sample of accounts for which the total amount of their balances is double that of the sample proposed in this article. The sampling variability of the estimates would be reduced more than 10 per cent by this change in the allocation of the sample. Also, we could make an optimum allocation which would include in the sample all the fourth and fifth strata

and confirm accounts with balances totaling 50 per cent more than the sample proposed in the example. It would reduce the sampling variability of the estimates of the control account by 40 per cent. Alternatively, it can be used to reduce the size of sample needed to produce estimates of the same variability, or to combine reductions in sample size and in variability.

The Purpose of the Sampling

Most of the foregoing discussion points to faults in thinking statistically. Perhaps the major shortcoming is confusion about the purposes of sampling accounts receivable. It is not to estimate the total of such accounts, i.e., to provide a figure to be substituted for the total in the control account. It is actually to *test* that total, not to *estimate* it. If the confirmations reveal many material errors, the control account is suspect even though the estimate from the sample happens to fall well within the tolerances and close to the total shown by the control account.

Likewise, if no errors are found in the accounts confirmed, but the estimate from the sample differs from the control account total by more than the tolerance, the accountant may be warranted in accepting the control account and attributing the difference to an unusually large sampling variation. He will, of course, test the footings and other possible sources of the difference before he reaches this conclusion.

These are major flaws in an otherwise commendable attempt to simplify statistical procedures for use by auditors. It would be unfortunate if confused ideas and incorrect methods were to become established in auditing where so much care has been taken to maintain sound procedures and provide dependable opinions. It would also be unfortunate if reliable statistical methods were to be rejected through a misunderstanding of the correct procedures. Accountants and statisticians should work together to assure correct understanding and develop the use of statistical sampling wherever it is appropriate.

TECHNICAL ASSISTANCE IN ACCOUNTING IN TURKEY

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INTRODUCTION

EACH year when the U. S. Budget is being discussed in Congress one of the most controversial items is the appropriation for foreign aid. The Foreign Aid Program consists of three major parts:

1. Military aid, which consists of matériel for defense.

2. Defense support, which is dollar aid given to our allies maintaining their own defense forces. The maintenance of these forces causes a strain on the local economy.

3. Technical assistance, which for some years was called the Point Four Program. This part of the program receives the smallest portion of foreign aid.

From the dollars appropriated for technical assistance a very small portion is being spent on Technical Assistance in Accounting to the Republic of Turkey. This assistance is provided by New York University (under contract with the International Cooperation Administration) to the University of Ankara and the Federal Ministry of Education. The principal phases deal with Public Administration; however, Accounting, Law, and Commercial Teacher Training are also included. This article is concerned primarily with the accounting aspect of the program.

BACKGROUND OF THE PROGRAM

In 1951 a report by the International Bank for Reconstruction and Development stated: "There is also urgent need for the establishment in Turkey of a system for the training and licensing of certified public accountants. This is needed not only to strengthen public confidence in accounting as an inducement to investment, but also to make available to businessmen and to management of state enterprises fundamental information which accounting provides at the present time. Because of the lack of uniformity in accounting terminology and practice, financial statements tend to conceal and confuse rather than to reveal and clarify."[1] While this statement is general in scope, it does not reflect the significant accounting accomplishments of recent years in Turkey.

Since Turkey has a large amount of socialized industry, the position of accounting in state enterprises needs further amplification. In a private enterprise system bankruptcy or increased efficiency is the choice of the inefficient producer. In a state enterprise these controlling factors are not present. If the state enterprise produces inefficiently, the results are (1) the consumer pays higher prices or (2) the loss is covered by the state budget. Both may have inflationary effects. In state enterprises accounting often is more important to the total economy than in the private enterprise system. In private enterprises accounting is relatively significant only to individual firms.

[1] *The Economy of Turkey*, Report of a mission sponsored by the International Bank for Reconstruction and Development. The Johns Hopkins Press, Baltimore, 1951, pp. 117–118.

The Foreign Aid Program in Turkey

At an early date it was obvious to the American advisers that the only people who could effect any real changes in Turkish accounting were the Turks themselves. Further, all changes would have to be introduced gradually. Any radical changes would not be acceptable. It might be added that this procedure is necessary for a great deal of foreign technical assistance. Sometimes, the visiting technicians plan the end results without making provision for the intermediate steps which are necessary to achieve these final hoped-for results.

The primary problem is one of communications. There are a number of qualified accountants in Turkey and accounting practices are often quite good. Unfortunately, there was no way, until recently, for these accountants to share their information with other accountants. There were no regular accounting publications. There were no congresses where there could be an exchange of ideas. A small group called themselves the Society of Expert Accountants, but most of the members did not take part in projects which would advance the profession. The educational groups worked separately and therefore provided little advancement for the profession.

A proposed CPA law was introduced in the Turkish Parliament about three years ago. This proposed law has not gained wide support. In addition there is opposition to it from the lawyers.

After investigating the many problems the American accounting advisers decided that the primary problem was not the immediate passage of a CPA law. A more immediate goal was to get the accountants to work together and to provide them with the necessary means of professional communication. In March, 1957, representatives of the New York University Group met with representatives of the Society of Expert Accountants to discuss these problems. It was decided that this Society, in cooperation with three or four Turkish educational institutions, should organize an Accounting Congress to be held in September, 1957 at the Political Sciences Faculty of the University of Ankara. (The Turks prefer to use the term "Congress" rather than "conference" or "convention.")

Contacts were made with various educational institutions to have them appoint representatives to a planning committee. This committee met monthly in Ankara to plan the congress. Fortunately, the committee soon learned that John Carey, Executive Director of the American Institute of Certified Public Accountants and Carman Blough, Research Director of the American Institute, would both be attending the Seventh International Congress of Accountants in Holland in September, 1957. Both of these distinguished men agreed to address the First Congress of Turkish Accountants before attending the International meeting. The date of the congress was set so that the speakers could come to Turkey before going to Holland.

The agenda of the congress was carefully planned. Invitations were issued to several score accountants by mail. Press and radio releases informed those who were not reached by mail. The congress program was organized around several speakers. Experts in various areas presented papers, and discussions followed. The congress lasted three and a half days, with the final session being devoted to a general meeting of all participants.

The speeches of Mr. Carey and Mr. Blough assisted the American advisers in planning the future program. Mr. Carey traced the development of the accounting profession in the United States. He started with the early influence of the Chartered

Accountants of England on United States Accounting. From this he described how a few devoted accountants led to the beginning of the accounting profession in the United States. His was a message of hope to the Turkish accountants that said that they also could establish a profession in their country. Mr. Blough pointed out (1) the need for research in accounting and (2) the need for an accounting magazine in Turkey. His speech emphasized the points the American advisers had previously made. Some of the Turkish accountants who can read English were acquainted with the writings of Mr. Carey and Mr. Blough and they told their fellow accountants about the professional status of United States accountants. This made a strong impression on the Turks.

The general meeting devoted itself to the steps that should be taken to advance the accounting profession in Turkey. There was a great deal of discussion about the proposed CPA law. Two resolutions were passed which made the congress a success, from the standpoint of the American advisers. The first resolution set the place for the Second Accounting Congress to be held at the Istanbul Higher School of Commerce in September, 1958. The second resolution provided for the establishment of an editorial committee to publish a Turkish accounting magazine.

The planning committee for the Second Accounting Congress met monthly in the fall and winter of 1957–58. This planning committee was also the editorial committee for the proposed new magazine. The plans for the Second Congress were soon made. For 1958 only one guest speaker was invited from the outside. The remainder of the four days were devoted to discussions in working committees concerned with several basic accounting problems. These committees in turn submitted reports to a general meeting on the last day. In the meantime, the editorial committee for the magazine was collecting articles so that the first issue of the accounting magazine could be distributed at the opening of the Second Congress. (Mr. Carey's and Mr. Blough's speeches were printed in this first issue, translated into Turkish.)

The outside guest speaker for the Second Congress was Dr. Paul Garner, Dean of the School of Business Administration, University of Alabama. He served in three capacities: He opened the Congress with an address (through an interpreter) on "The Meaning of Accounting Professionalization." His speech gave the Turkish Accountants their long-range goals. He then addressed the Committee on Cost Accounting. This was supposed to be a speech only to the cost accounting committee, but all the other committees recessed so that they could hear his talk. Finally, he consulted with the educators in Istanbul and Ankara to discuss some of their problems in the Business Administration area.

The general meeting of the Second Accounting Congress discussed the committee reports. The guest speaker attended this meeting and presented further remarks on what should be the objectives of the profession in Turkey in the next few years. He was not accustomed to a meeting of professional organizations where there was no movement of people in and out of the session. In this meeting there was no movement; everybody arrived early and stayed to the end. Actually, the meeting started at nine in the morning and lasted until two in the afternoon. There was only one ten minute break during all this time. In spite of this long period almost all the accountants remained until the very end.

The committee reports emphasized one thing: the time allotted at the Congress was not sufficient to solve all of the problems. All the Chairmen suggested that

further work was needed. Committees were then organized to work through the year and to report their recommendations to the Third Accounting Congress in 1959. One of the most encouraging events at the congress was the discussion concerning the place of the Third Congress. Two institutions offered to sponsor the Third Congress! A compromise was agreed on in that the Faculty of Economics of the University of Istanbul will sponsor the Third Congress and the Izmir Higher School of Commerce will sponsor the fourth. It is definite, therefore, that these congresses will become an annual affair.

Since the meeting of the Second Congress two more issues of the Turkish Accounting *Journal* have been published. It is hoped that this magazine will be published four times a year. At this time there are 625 subscribers. This circulation size is encouraging for a country like Turkey. If this number of subscribers can be maintained, the magazine will continue to be published indefinitely.

The most active committee of the Second Accounting Congress was the one concerned with work on the proposed CPA law. This committee has subsequently met with the Minister of Finance and his representatives, as well as the Chairman of the Legislative Committee in the National Parliament. The committee has been able to get these officials to accept all changes requested in the proposed CPA law except one. It is now preparing a brochure to send to all the representatives of the national legislature explaining why the law should be passed. The committee has the authority to speak in the name of the Turkish accountants and not just as individuals.

Summary

The work described above with the Turkish accountants represents only one phase of the technical assistance rendered by the American advisers. The American advisers are also teaching in Turkish educational institutions. In these institutions their responsibilities include the development of new accounting courses and the preparation of better teaching materials. These functions are extremely important, but the most rewarding work has come from working with the Turkish accountants who now have the means in their hand to organize and advance the profession of accounting.

During the trying periods of this work the American advisers had the constant encouragement of the Heads of the NYU Group in Ankara, namely, Dr. Henry Stanford, now President, Birmingham-Southern College; Professor Lorentz Adolfson, Director of Extension Division, University of Wisconsin; and Donald MacDonald, formerly Chief of Public Services, International Cooperation Administration, Ankara. If anything has been accomplished in Turkey it is due to the assistance of these men and their understanding of the many problems.

THE ROLE OF ACCOUNTING IN DECISION MAKING*

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BUSINESS is getting an increasing insight into its cost mistakes. It is analyzing their causes and taking preventive action. One means of taking preventive action is through financial analysis. Financial analysis is a service performed by the accountant for management. It is aimed at assisting management's decision-making processes toward the goal of better profits.

Let us examine it in greater detail.

Every day a business enterprise is faced with alternatives. Choosing between these alternatives is the decision-making process that means the life of the business. For example:

From a list of proposed capital expenditures, a management must select those that provide the most promising profit opportunities.

From another list of research projects, a choice must be made of those that fit into the company's research budget, again with an eye to long-range profit potential.

A decision must be reached on the proposed purchase of a related plant or business enterprise.

The products, lines, and segments of the business must be weighed for addition or subtraction.

Again, it may be simply a question of weighing the merits of leases, lease-backs, or outright ownership.

These are a few of the possible situations. There are many more. But they all have two qualities in common. One is a need for money—capital investment. The other is the hope for profit. All other things being equal, it is the relationship of profit to investment that gives the answer.

The whole process through which investment and profits are defined and projected has in recent years been given the name of financial analysis.

Financial analysis cannot be done by the amateur. Every business man is a self-styled analyst and, in large corporations, this function is assumed by nearly every department head and division manager, by heads of sales, scientific research, and production. Unfortunate results occur when action is taken on the basis of inadequate information or untrained thinking. Thus, many well-informed managements have established the position of financial analyst as a screening point for all profit-seeking ventures and all proposals involving the outlay of capital.

In such organizations the financial analyst is basically an accountant who has moved up the ladder to a position of responsibility and authority. In some of the larger corporations he is supported by a staff of two or three accountants who assist him in this function.

It is the job of the accountant, as financial analyst, to uncloak even the most obscure aspects of proposals calling for capital expenditure, to remove any camouflage that may exist and to re-express them in common language and format, us-

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* This paper was presented at the annual meeting of the American Accounting Association at the University of Colorado on August 25, 1959.

Mr. Lewis' newest book, *Financial Analysis for Management*, is reviewed on page 174.

ing similar definitions and measurements and adopting as a common denominator a comparable formula for investment, return, and profit.

In this way, the accountant, or analyst, sets the stage for decision and action. The process includes the selection of the problem, the weighing of alternative solutions in the light of their profit potential, and, finally, the process of elimination through which the most profitable alternative is isolated and recommended to management.

In order to seek all the possible implications of financial analysis, let us look at some of the common mistakes business is making today:

1. *Sending good money after bad*

Some of the greatest waste in business today comes in the amount of executive talent that is expended trying to salvage something where good financial analysis by the accountant would show that the proper course of action was to liquidate or sell the operation entirely. A buyer may be able to operate it profitably. Long range planning, coupled with good financial analysis, would have pointed up the question for decision and action.

For example, a company producing explosives found itself side-tracked in an unprofitable venture in three or four hardware lines which it had hoped to sell through existing channels of distribution. But the venture had departed far from the normal work flow and talent represented by the existing organization. The result: regular annual losses. Perennially, the company invested more equipment, time, and talent in an effort to stem the losses. Nevertheless, these continued for ten years before the venture was liquidated. And one of the major losses was never reported in the figures: top management time deflected from more profitable opportunities.

2. *Making decisions by default*

Passive action is actually a decision. Whenever a business continues as in the past, it's a passive decision to remain unchanged—a decision not to buy a new business or take up new opportunities. The business doesn't say "no," but on the other hand it doesn't say "yes." It's the negative action of doing nothing.

As an illustration, a producer of hydrocarbons with a small foothold in the industry passed an opportunity to acquire much-needed talent, manpower, and know-how through a merger or acquisition of a small but promising company. No review was made of the situation and no decision taken until too late. Then it was learned that the company had been acquired by a competitor. With good financial analysis, this issue might have been brought into focus and favorable action might have been taken in time.

3. *Reaching the right decision too late*

Prejudice against new systems and work flow (it might be automation) delay decisions indefinitely when good financial analysis might show the real benefits of new methods and bring about the change.

For example, a management engineering firm was called in to make a review of office operations in a multi-branch company with centralized bookkeeping and clerical operations. As a result, the company achieved in a year's time a saving of \$350,000 or approximately 10 per cent of existing overhead.

"While all this is very gratifying," reported the management concern, "the sad thing is that the savings could have been made ten years earlier."

4. *The common mistake of over-diversification*

If you buy or acquire something that doesn't fit in, there's no way in which the existing overhead can be spread out to ac-

commodate the new venture. So it is just an added segment without logical relationship to the rest of the business.

What is the test of an acquisition? It could be something that will supply raw materials or products to the existing enterprise. One form of vertical integration that is justified is one where you are acquiring the company that produces your raw materials. Or on the other hand, it could be a company that uses as its raw material or source of supplies the very material produced in your own company. There is a very logical way of fitting such pieces together.

Financial analysis must show that the purchase price of the new venture is justified by the overall profit returns in the form of lower costs of operation or increased business or both.

Take an illustration. A chemical manufacturer ventured into the container business in a small way in an area where he had no previous experience. There was no significant flow of products from the chemical firm to the container division or the other way around. Diversification had not been achieved, either horizontally or vertically. Nor was there any expense saving from absorption of overhead or the use of existing services or facilities in the new venture. Moreover, important time was taken from other and more profitable assignments. After a few years, the container division was sold to a large manufacturer in the industry. It should never have been acquired.

5. *The opposite error of under-diversification*

A company may have a fine set-up for manufacturing and distribution but still fail to use it to the fullest potential; logical products could be added under the existing roof by using the sales force of the going organization.

Diversification does not always mean the addition of new products to the manufacturing process. Instead, diversification can often be accomplished profitably by obtaining the added products through a supply contract or by buying products from another company. Thus, diversification of distribution is achieved without affecting the manufacturing operation and the consequent investment that might be required.

The key here is that existing expenses could be spread more thinly to accommodate greater volume, thus reducing cost ratios and improving the profit relationship of the investment.

To cite an example, a major television and electrical appliance manufacturer was losing competitive position because of its failure to offer a complete line. The major omission was washing machines and dryers. While these product lines did not seem to fit into the manufacturing scheme, their omission was causing distributors to shift their business to other manufacturers. A solution was found ultimately through a joint manufacturing venture assuring a source of supply for the needed appliances. But meanwhiie, competitive ground had been lost and it took the firm some time to recapture position.

6. *Perverse error of over-retrenchment*

Frequently, during periods of temporary recession, companies may err in terms of too much action to eliminate the "unprofitable" products. Further inspection would show that the seemingly unprofitable products are making a profit after all. The answer revolves around fixed overhead.

For example, a product that seems to be losing $1,000, or let's say one per cent of sales, may appear on paper as unprofitable. Closer inspection shows that this product is assessed with $4,000 of general plant overhead. These are overhead costs prorated against the various products on a more or less arbitrary basis. But if the one

product were eliminated, the plant overhead would go on relatively unchanged. So, the product is not really losing $1,000. Instead, it is actually contributing $3,000 against overhead, a much more enlightened point of view.

For example, a general wholesaler found itself trying to cover too wide a field and facing vigorous competition from chain stores and other distribution channels. The shift from a seller's to a buyer's market in the post-war period had caught it off guard and many products were showing a loss. The company prepared full cost distribution worksheets in which all elements, including administrative and clerical expenses as well, were assessed against the individual products—and those showing a loss were promptly eliminated! But the oversight here was that there was a relatively fixed element of overhead that remained unchanged, even in the face of elimination of numerous products. Sales volume declined a third, but administrative costs in some categories were as large as before. The company finally changed its tactics and adopted new accounting schedules showing "profit contribution by products before assessment of fixed overhead." This served as a more accurate indicator of action to be taken in dropping lines or products. The situation was corrected but not until an overly severe and unnecessary setback had been suffered.

These mistakes can be avoided by a system of good financial reporting and financial analysis. It is the accountant's job to perform these functions for management. His role in decision-making is performed through these channels.

Most firms have budgetary contrôl and long-term planning programs, but such programs do not carry their own solutions unless supplemented by financial analysis.

How does one proceed under a program of financial analysis?

First, there is the selection of a problem or a series of problems to be subjected to review and study; then the finding and weighing of alternatives relating to each problem; and finally, decision and action. The most essential ingredients of financial analysis are the listing of investment requirements and profit expectations under each possible alternative.

Investment and profit give the answer.

The project in question might be a research expenditure or a plain capital expenditure. Or it might be the liquidation of one part of a business and setting up another operation. Again, it might be simply a replacement expenditure where old equipment is being replaced by new.

In the simplest form of analysis, you have Alternative No. 1 versus Alternative No. 2. It is fundamental to recognize—not the alternatives themselves—but the differences between them. And it is also fundamental to recognize that, while profit and investment seem to give the answer, the greater problem is to define what is meant by profit and investment.

Included in the analyst's kit of tools for decision-making is the unique "rule-of-seven." Nearly every problem of selection is finally reduced to seven magic numbers that give the answer.

Rule-of-Seven

1. Investment now, *before* reflecting the proposed change.
2. Investment projected, *after* reflecting the proposed change.
3. Investment increment. This is the difference between one and two.
4. Profit now, *before* reflecting the proposed change.
5. Profit projected, *after* reflecting the proposed change.
6. Profit increment. This is the difference between four and five.
7. Rate of return. Profit, line 6, divided by investment, line 3.

Almost invariably the proposals for capital spending will exceed the available funds. As a result, some are pruned back,

others are deferred or eliminated, and a "survival-of-the-fittest" approach is then adopted to produce a spending budget that matches the available funds. The yardstick is the profit potential, or rate of return.

The process of analysis is not theoretical. It is downright practical. And the processes that survive are only those that have stood the test of time through hard usage over the years.

This leads us, then, to the following checklist for the financial analyst. These are suggested ways in which the accountant can improve his role in the decision-making process by offering an effective service as a top flight analyst for management. Ten suggestions for better financial analysis are given as follows.

1. *Use an easy approach*

Nothing could be simpler than the easy formula of book net profit divided by gross investment to produce rate of return. The dictum "make-it-easy" rules out the complicated investor's approach and other averaging formulas. The investor's method has been known as well by other names such as the discount formula, or present value method. In reality, it is a trial-and-error method. Two interest rates are found, one falling above and one falling below the correct answer. Then, by interpolation, the correct rate is established in between. The theory is that the true rate of return is an interest rate through which the entire stream of future income is reduced to a present value exactly equal to the initial capital outlay. And its use requires a set of present value tables.

All of this is great fun for the mathematician, or for the student of actuarial science. And much has been written to prove, and quite correctly so, that this is the only wholly accurate approach for computing rate of return over the life-span of a capital expenditure proposal. But where the method wins on theory, it falls down in practice. It is complex and difficult. Its format does not lend itself to easy reading and interpretation. But, worst of all, the investor's method is completely lacking in its potential for control follow-up. One cannot make easy comparisons from year to year of actual rate of return achieved against return as budgeted. Instead, to test actual performance against the rate of return projected under the investor's formula, one could have to wait until the end of the property's life cycle. This might be 15 years later! By this time, no one remembers, no one cares, and nothing can be done about it anyway.

So, the advice to the practical business man is this. Avoid the investor's method and various averaging formulas. Use straight net profit related to gross investment. By doing this you will err only slightly from the answer that would have been given under the more complicated approaches, and your error will be safely on the side of conservation. And what's more, you will have a method that you can control, permitting the valuable comparisons of division-against-division, budget-against-actual, and this year-against-last year that are so vital to the profitable management of your business. And better yet, you and everyone else will understand it.

The accountant would do well to remember this need for simplicity in preparing his analyses and recommendations for management.

2. *Use an incremental approach*

Seldom does a proposal for growth and expansion stand alone, aside and apart from the already existing business. More often, the existing operation will provide products or raw materials to the proposed new venture, or vice versa, or, at least, there will be savings to the extent that the administrative set-up of the existing com-

pany is able to absorb the burden of caring for the new segment. Thus, duplicate overhead is eliminated. This factor alone is often enough to spell the difference between success or failure of the proposal.

The recommended approach, therefore, is a "before" and "after" appraisal. In Column 1 show all the factors—sales, costs, earnings, and balance sheet elements—as projected for the coming year *before* reflecting the proposed addition or acquisition. In Column 2 show the same elements for the total business as it would be *after* reflecting the proposed addition or acquisition. Subtract and show the differences in Column 3. These are the increments. Now divide the profit increment by the investment increment. The answer is the incremental rate of return related to the proposal. As far as figures go in determining the selection, this figure is the basis for decision, yes or no, to approve or reject the proposal.

3. *Define investment as gross tangible assets*

What is investment, anyway? Is it the sum of all the assets, less current liabilities? If so, should assets be reflected gross before deducting depreciation reserves, in other words, as gross tangible assets? Or, should depreciation reserves be subtracted to reflect net tangible assets?

Practical experience seems to dictate the former, i.e., gross tangible assets, as the better answer of the two in problems of internal control, planning, and decision-making, because the gross basis meets the following three tests. . . .

TEST ONE—In computing return on investment, select an investment base that will make it possible to appraise and compare actual operations from year to year against results as projected on the financial analysis used to support the expenditure.

TEST TWO—In computing return on investment, select an investment base that will make it possible to appraise and compare actual operations *from year to year* within the same division or segment of the business.

TEST THREE—In computing return on investment, select an investment base that will make it possible to appraise and compare operations in one division against operations in other divisions, year after year.

Only the gross investment base permits these useful comparisons—against budget, against previous years, and against other divisions—on a fair and continuing basis. The net investment base misses on all three counts, all relative comparisons being destroyed completely by the mere happenstance of the depreciation cycle. Imagine an investment of $10 million, half current assets and half property with a 10-year life, and with a net profit of $1 million annually. Under the gross approach there is a constant return of 10%. Under the net approach the investment starts at $10 million the first year. The second year or $9.5 million, the third $9 million, and so on until, at the end of the tenth year, the investment is down to $5 million. Return on investment is shown at 10% the first year, 10.4% the second year, 11.1% the third year, and so on. In the final year the return is 20%. And all of the fluctuation, from 10% to 20%, is due to nothing more than the particular stage of the depreciation cycle at the moment of comparison. To avoid these meaningless fluctuations in rate of return, practical business men are leaning more and more toward the gross asset total as an investment basis in decision making and control of operations. This is something for the practical accountant to remember.

4. *Use investment as of a fixed date*

Investment may be defined as beginning of year, average, or end of year. Investment beginning of year has the disadvantage of being over before the year begins. Hence, as a measure it has no incentive for reduction. Average investment is inflated for interim fluctuations which are often financed from temporary sources, and it is complicated. End of year invest-

ment as a measure provides the maximum incentive and it is simple.

In reaching decisions relating to capital expenditures, it is expedient and practical to use investment beginning of year. Once the analysis stage is past, however, greater stimulus can often be obtained internally by measuring and rating performance on "end of year" investment. The complex averaging methods can usually be avoided without any great injustice.

5. *Use net profit on a book basis*

Nothing could be more inconsistent than to keep the books on one basis, and to reach management decisions on another. The rules of conservative accounting practice are now well defined. The answer sought is profit, net after taxes. If this is good enough for bookkeeping, it should be good enough for decision-making as well. Even the often-mentioned "cash payout" is a dangerous alternative.

Consider the case of a corporation with $10 million cash to invest in one of two alternatives. One calls for $5 million equipment with a 5-year life span, while the other calls for $5 million equipment with a 10-year span. Both require $5 million of working capital. Both will bring in $10 million sales annually, less $7 million in costs, leaving $3 million gross profit before depreciation and taxes. The first requires $1 million in depreciation, leaving a pre-tax profit of $2 million, and, assuming taxes at 50%, a net profit of $1,000,000 and a return of 10%. Also, adding back depreciation to net profit, one arrives at the cash throw-off of $2 million, indicating a 5-year payout.

The second alternative requires $500,000 depreciation, leaving $2.5 million pre-tax, or $1,250,000 net after taxes, a return of 12.5%. Adding back depreciation, the cash throw-off is $1,750,000, and the payout 5 years and 9 months.

How wrong one would be to pick Alternative One because of its shorter payout! This alternative also has a shorter life. While it pays out in 5 years, it has no further life remaining at that point. Alternative Two, on the other hand, pays out in five years and nine months, at which point it has a remaining life of four years and three months. Stated differently, the first alternative pays out at the end of its depreciation cycle, while the second pays out when the cycle is only 57% completed. The true advantage of Alternative Two is only seen when one disregards payout and looks instead at book net profit related to investment. The second alternative earns 12.5%, the first 10%. The correct selection is, of course, Alternative Two in this example.

6. *Use the existing accounting format*

Frequently capital appropriations may originate in non-financial areas within the corporation, and may be presented directly to management, without proper screening, only to discover later that liberties in accounting treatment or omissions of important cost elements have occurred. This can be avoided by setting up a financial analysis group within the corporation through which all proposals are screened for uniform treatment.

When this is done, all proposals are expressed on the established accounting format, using uniform definitions of profit and return.

7. *Reflect the true life-cycle of the property*

Decision on capital expenditures would be greatly distorted if one were to reflect the accelerated depreciation permitted under current tax laws. While such provisions are helpful tax-wise, they are damaging to the profit outlook of the proposal in the early years. The correct treatment is to reflect true depreciation in the proposal, as accurately as possible.

The recommendation is to use normal depreciation for purposes of appraisal and bookkeeping, and to use the accelerated

basis for tax purposes only. Tax savings generated from the differences between the two treatments are carried in a reserve for deferred Federal income taxes appearing on the liability side of the balance sheet.

8. *Write off non-recurring expenses or losses immediately*

Should non-recurring outlays for pre-operating costs or start-up expenses be added to the total investment against which return is figured? And should an amortization of such outlays be provided in the projection of future profits? The recommended answer is a resounding "no" to both questions. Instead, such items should be written off immediately, with full disclosure. Analysis of such costs will usually show that at least some of them are clean-up expenses relating to past operations, losses on disposal of obsolete or worn capital assets, severance pay and so on. Still others are pre-operating or start-up expenses that reflect nothing more than a slow start in bringing the new venture up to capacity. Conservatism and tax considerations are two arguments for immediate write-off. But the more important reason for immediate write-off is that this course provides a more reasonable background for intelligent analysis and appraisal.

9. *View replacements as two separate transactions*

A replacement is not a single transaction. It is two transactions and should be so regarded. One, it is a liquidation of existing properties, with its related non-recurring liquidating expenses, its loss of revenue, and loss of profit. Two, it is a capital addition with its incremental investment, profit, and percentage return. A replacement expenditure cannot be appraised against a background of present operations. Instead, decision can only be reached fairly by comparing the projected situation after replacement with the situation that would exist if the replacement were not made at all, in other words, against the situation that would exist if the worn or obsolete properties were simply liquidated or abandoned altogether. Only then will one obtain a measure of the investment and profit increments attributable to the proposal.

10. *State results consistently and conservatively*

By following the preceding nine rules, the tenth is automatically attained. Consistency is obtained by following the same rules year after year, division after division, in all situations alike. Consistency is also enhanced by preparing projections to support proposed capital outlays on the same accounting format and under the same accounting rules.

Conservatism is attained by passing all capital appropriations through one screening point in the financial division for review as to accuracy and completeness of estimated costs.

Decisions in business are decisions for profit. Such decisions are based on facts which in turn stem from figures. Preparation and interpretation of such figures are the forte of the accountant. By channeling such facts and figures to management in the form of intelligible reports and financial analyses the accountant will point the way to decision and action for better profits in the business enterprise.

TAX CONSIDERATIONS IN INTRA-COMPANY PRICING

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When products are transferred among the corporate units of a family of corporations, a "sales" price must be established to properly account for the transfer. The intracompany transfer price may or may not contain an element of profit to the selling unit. By the inclusion or omission of this element of profit in the transfer price, net income can be retained in one corporation or shifted from parent to subsidiary, from subsidiary to parent, or from one subsidiary to another. The decision to use one basic type of system, i.e. containing an element of profit or not, has, therefore, a definite effect upon the amount of net income and consequently upon the amount of tax paid by a family of corporations.

Shifting of Net Income Within Family of Corporations

The Federal corporate net income tax rate for tax years beginning after June 1959 is 25 per cent on the first $25,000 of taxable income and 47 per cent on all corporate taxable net income above $25,000. Because the tax claims such a large share of the profit dollar, management must carefully consider the income tax effects of any decisions in matters which have a bearing upon the taxable net income of the corporation.

The fact that by intracompany pricing a corporation may transfer net income from one unit to another assumes importance because of the structure of the United States corporate net profits tax. Section 11 of the Internal Revenue Code of 1954 provides:

"(a) A tax is hereby imposed for each taxable year on the taxable income of every corporation. The tax shall consist of a normal tax . . . and a surtax . . .
(b) Normal tax (taxable years beginning after June 1959) 25 percent
(c) Surtax—The surtax is equal to 22 percent of the amount by which the taxable income . . . exceeds $25,000."

This surtax exemption of $25,000 is granted by the code to every corporation, whether parent or subsidiary. It therefore becomes theoretically possible to decrease the amount of income tax to be paid by increasing the number of subsidiary corporations. Tax could be minimized by forming a sufficient number of such corporations and, by means of intracompany transfers, shifting company net income in such a way that each corporation in the family had net income of $25,000 or less.

This device could, of course, be used to evade corporation taxes properly due the United States Government. The Congress, fully cognizant of this possibility, has set up certain safeguards which are designed to prevent the evasion of taxes but at the same time not to prevent the legitimate use of intracompany pricing.

The first of these safeguards is Section 1551 of the 1954 Internal Revenue Code which states in part:

"If any corporation transfers . . . all or part of its property to another corporation which was created for the purpose of acquiring such property or which was not actively engaged in business at the time of such acquisition, and if after such transfer the transferor corporation . . . are in control of such transferee corporation . . . , then such transferee corporation shall not for such year be allowed . . . the $25,000 exemption from surtax

provided in Section 11 (c) . . . unless such transferee shall establish by the clear preponderance of the evidence that the securing of such exemption or credit was not a major purpose of such transfer."

The application of this section is limited to transfers of property from a corporation to a newly created or reactivated corporation under common control. Although thus limited, it does illustrate the unwillingness of the Congress to permit transfers of property for the purpose of avoiding the payment of taxes.

Section 482 of the 1954 Code gives the Director of Internal Revenue powers with a much wider scope. In the words of a Senate committee:

"This section now contains the provisions previously contained in Section 45 of the 1939 Code, allowing the Secretary or his delegate to allocate gross income, deductions, credits or allowances, among two or more organizations controlled by the same interests when such allocation is necessary either to prevent tax avoidance or in order that the income of the several organizations be clearly reflected. No substantive changes were made by the 1954 Code in the provisions of this section."[1]

Section 45 of the 1939 Code thus incorporated into the 1954 statutes reads as follows:

"Allocation of income and deductions

"In any case of two or more organizations, trades, or businesses (whether or not incorporated, whether or not organized in the United States, and whether or not affiliated) owned or controlled directly or indirectly by the same interests, the commissioner is authorized to distribute, apportion, or allocate gross income, deductions, credits, or allowances between or among such organizations, trades, or businesses, if he determines that such distribution, apportionment, or allocation is necessary in order to prevent evasion of taxes or clearly to reflect the income of any of such organizations, trades, or businesses."[2]

Although the scope of Section 482 goes far beyond the matter of products transferred between units of a family of corporations, it is with its application to intracompany transfers that we are concerned. The purpose of this section of the code is to prevent the arbitrary shifting of net income among taxable units of a family of corporations in order to prevent the evasion of tax liability. Although Section 482 empowers the Director of Internal Revenue to approve or set aside the effects of intracompany transfer pricing, it remains to be determined how this power has been applied.

This can best be determined through an examination of the court cases wherein the Director attempted to evoke the provisions of Section 482. Not one of the cases pertains specifically to intracompany transfers of product. All deal with transfers of securities or assets such as patents or machinery, etc. However, the language of the Code clearly may be construed to include transferred product and the cases cited could be applied since goods for either further manufacture or for sale are assets similar to securities or capital assets. There have been in the neighborhood of 40 such cases and the Director has won his point where the transfers of property resulted in an arbitrary shifting of net income. He has lost the cases where the defending taxpayer corporation was able to demonstrate that the transactions were reasonable and not arbitrary. Transfers of property appear to be fair and reasonable when they meet the test of being an "arm's length" transaction.

The "Arm's Length" Test

In the Stearns Magnetic Manufacturing Company case,[3] the Director attempted to set aside a transfer of property (a patent) between a parent corporation and its subsidiary. The Court held that

[1] Sen. Rep. No. 1622, 83rd Congress, 2nd Session, p. 310.

[2] Internal Revenue Code 1939, Section 45, 53 Statute 25, amended February 25, 1944.

[3] Stearns Magnetic Manufacturing Company vs. Commissioner, 208 F (2nd) 849, 852, affirmed C A (7th) 1954.

the transaction was valid because it was fair and reasonable judged by the standards of a transaction entered into by parties dealing at arm's length.

The term "dealing at arm's length" implies a transaction that would be fair and reasonable to two unrelated parties dealing on the open market. The pricing of the property transferred at fair market value is one of the strongest evidences that the transaction is fair and reasonable. In the case of Motors Security Company Inc.,[4] it was held that section 45 (now 482) could not be applied when securities were transferred between the related taxpayers at fair market value.

Again in the Friedlander Corporation case, it was held:

> "Where property has been transferred between 'controlled' entities at its fair market value, no adjustment can be made under Section 45. The mere existence of common control is not sufficient to justify the application of Section 45."[5]

In fact in the cases where the Director has been successful in evoking Section 482, the adjustment of net income between the two taxable entities is based upon the fair market value of the property transferred.

The requirement that transfer price be the equivalent of fair market value could be difficult. If strictly applied by the Director of Internal Revenue and if upheld by the courts, this requirement could, for tax purposes, restrict intracompany pricing to one method—market. Market less a discount perhaps could be defended where the discount was predicated upon savings in selling costs. The remaining methods of intracompany pricing such as cost and administered or negotiated prices clearly cannot fulfill the fair market value requirements. However, it is most significant that not one of the court cases wherein the Director attempted to evoke either Section 1552 or 482 of the Code pertained to products in intracompany transfer.

The "Business Purpose" Test

There is one additional test which has been applied by the Director of Internal Revenue and which is generally recognized as necessary. Each transaction must have a business purpose as contrasted with a tax purpose. The principle of requiring a business purpose was established by the Gregory case.[6] Gregory transferred some securities from one corporation to another, both controlled by Gregory, for the admitted purpose of reducing the amount of income tax when the securities were sold at a substantial profit. The Court held that there had been no valid business purpose to support the transaction other than to avoid taxes. The transaction was set aside and additional taxes assessed against the taxpayer. This case has been cited in many other cases to impugn business purpose in a transaction as contrasted with a tax purpose.

The business purpose requirement demands only that there be a demonstrable managerial purpose for the adoption of the particular type of intracompany pricing. If the business purpose dominates, the fact that an income tax advantage may be realized is not sufficient to sustain a disallowance by the Director of Internal Revenue. It is a well-known principle of tax law that it is not illegal for a taxpayer, where different methods are available to him, to choose the method to his advantage taxwise. However, the business purpose must be paramount.

Cases Settled Out of Tax Court

Of course, in many instances where the Director or his agents take exception to a procedure used by a taxpayer, the matter may be settled by agreement and never become the subject of a court case. In

[4] Motors Security Co., Inc., T. C. Memo op. Docket 31656, October 30, 1952.
[5] Friedlander Corp., 25 T.C. No. 12 (1955).
[6] Gregory vs. Helvering, 293, U.S., 465 (1935).

order to cover the possibility that intracompany transfer pricing may have been of this nature, the partners in charge of the tax departments of two of the largest Certified Public Accounting firms in the United States were interviewed. Their combined experience in the field of federal corporate net income taxes was more than thirty years. The question was raised with both these men as to the frequency with which the matter of intracompany pricing of transferred products was the subject of question by agents of the Director of Internal Revenue.

Both agreed that the question of shifting of net income between parents and subsidiary corporations by means of intracompany transfer pricing has very rarely been raised by Internal Revenue agents. One stated that in the 16 years of his experience with his office, few such questions had been raised and in only one instance has Section 45 (now 482) been invoked against his client. This one case involved the transfer of property other than product. He went on to state, however, that many clients had asked to have their intracompany pricing systems reviewed by the Certified Public Accounting firm. In those cases the firm did so and either approved the method in use or suggested changes if serious profit distortion was found. In the majority of cases the client's methods were found to be satisfactory from a tax standpoint.

The tax partner of the other firm stated that in a few cases the intracompany pricing system had been questioned by Revenue agents, but that they had in every case been satisfied when the matter had been fully explained.

Tax Problems of Intracompany Transfer Pricing with Respect to Inventories

Products from intracompany transfer are often placed in the inventory of the purchasing corporate unit. Whether or not the transfer price of the goods contains an element of profit will have some effect upon the net income of the affiliated corporations and thus upon the amount of corporate net income tax to be paid. In general it may be stated that unless the profit not realized by sale to an outside company is removed from inventory, net income will be increased by the amount of that profit.

This effect of intracompany profits in inventory raises two questions. First, what are the income tax regulations with respect to the inclusion or elimination of intracompany profit in inventory? Secondly, what is the practical result of this inclusion or elimination upon the amount of corporate net income tax to be paid?

Must Intracompany Profits Be Eliminated from Inventory?

If a parent and subsidiary corporation each files separate corporate tax returns, they are treated by law as separate tax entities. Accordingly, intracompany profits need not be eliminated from inventories. In fact, since the transfer price becomes cost to the purchasing corporation, the regulations would not permit the elimination *per se*. Any such elimination could only be justified because of the use of the "lower of cost or market" inventory method.

However, Section 1501 of the 1954 Code provides:

"an affiliated group of corporations shall, subject to the provisions of this chapter, have the privilege of making a consolidated return with respect to the income tax imposed . . . in lieu of separate returns."

In general, when parent and subsidiary or subsidiaries file a consolidated tax return, intracompany profits (or losses) in inventories must be eliminated in arriving at the consolidated net income. Section 1502–31 (b) (1) of Treasury Regulations provides that when filing a consolidated return:

"The taxable income of each corporation shall be computed in accordance with the provisions covering the determination of taxable income of separate corporations, except—(1) There shall be eliminated unrealized profits and losses in transactions between members of the affiliated group . . ."

The elimination of intracompany profit from inventories may be a complex and time consuming process. This could well be an important consideration in the choice of an intracompany pricing system. There is little doubt that required elimination of intracompany profits for tax purposes would predispose many companies towards the use of the full factory cost method. However, the Director has not interpreted Section 1502–31 to necessarily require that all goods from intracompany transfer remaining in inventory be reduced to cost. Where intracompany transfers occur as part of a consistent practice and in the regular course of business, the Treasury, upon application, will not require the elimination of intracompany profits from inventories.[7]

The tax law, then, permits the use of an intracompany transfer pricing system with or without an element of profit. If a price including an element of profit is chosen, the regulations provide a means by which the taxpayer may make a free choice between retaining or eliminating the profit in inventory.

Changing from Consolidated Returns

There is one further point that should be mentioned in connection with inventories. An affiliated group of corporations has the option of filing separate or consolidated tax returns. Once the option to file a consolidated return is exercised, the group must continue to so file unless permission to change to separate returns is granted by the Director of Internal Revenue.[8] This permission to return to separate returns is granted to all United States corporations in years when Congress makes changes in the Code which necessitate a reconsideration of the decision to file a consolidated return.

When the change is made from a consolidated return to separate returns, tax could be avoided if profit, eliminated from the closing inventory of one of the affiliated corporations in the year the consolidated return was filed, were to be included in the opening inventory when filing the separate return. Several court cases cover this point. The Bostonian National Shoe Stores, Inc. case is typical. This company and its subsidiaries filed a consolidated tax return in 1933 in which intracompany profits had been eliminated from inventories. In 1934 separate returns were filed and the opening inventories included the intracompany profit eliminated in the prior year. The court held:

"The elimination of an affiliated seller's intracompany profits from the consolidated closing inventory of a prior year requires similar reduction of the opening inventory costs of the affiliated buyers for 1934."

This point is purely technical and should have little effect upon management's decision of whether to use an intracompany pricing system with or without an element of profit.

Conclusions

A careful consideration of the relationship of the United States federal net income tax laws and regulations to intracompany pricing discloses two main problem areas. First, the possible tax consequences of shifting net income between parent and subsidiary corporations by means of intracompany pricing systems containing an element of profit and, sec-

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[7] Regulation 1: 1502–31 (b) (1).

[8] Treasury Regulations, Section 1, 1502–11 (a). "If a consolidated return is made under Section 1502 for any taxable year, a consolidated return must be made for each subsequent taxable year during which the affiliated group remains in existence. . . ."

ond, the tax problems arising from intracompany profits in inventories.

Unquestionably, net income may be shifted from one corporate unit of a family of corporations to another with a resulting benefit, in some cases, in the amount of corporate net income tax to be paid. It appears from the tax cases on record and from the experience of well-known tax authorities that such tax benefits will not be questioned if there is a business purpose for the transaction and the choice of intracompany method meets the "arm's length" test and was not primarily for the purpose of avoiding payment of taxes.

With respect to inventories there is a requirement that intracompany profits be eliminated from inventories. However, this does not in any way restrict the use of any of the various intracompany pricing methods. Moreover, even the requirement for elimination of intracompany profits in inventory can be avoided by special permission from the Director of Internal Revenue if the transfers are frequent and in the regular course of business.

A PROPOSAL FOR AN INTEGRATED COURSE IN STATISTICS AND ACCOUNTING

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IN RECENT years it has become increasingly evident that many managerial problems could be best handled by an integrated application of accounting and statistical knowledge. The actual integration of these two disciplines in the business world has been progressively increasing. Relatively little effort, however, has been exerted toward merging these two disciplines in the curriculum of business schools. In this paper we will discuss some of the applications that have been made and then outline a course that would integrate the teaching of the two disciplines. At the same time we will discuss reasons why such a merger is desirable.

Application of Statistical Techniques to Accounting Problems

Applications of statistical and sampling techniques have been made to a number of accounting problems. In the area of accounts receivable, applications have been made to the confirmation of receivables and to the aging of receivables. In the area of inventory there have been applications which involve the estimation of a LIFO index, the substantiation of an inventory through a combination of verifying perpetual inventory records and taking a sample physical and the estimation of an inventory by taking an actual sample physical. In the inventory area there has also been a test on bulk inventories to verify an ore percentage as given on the books.

Now what does it mean to say "an application of statistical techniques or of sampling techniques has been made to a particular accounting problem"? It means that scientific techniques have been applied to a problem where the approach has previously been one of using judgment as a means of gaining information. For example, let us look at the application of the aging of accounts receivable. The usual practice is to select some arbitrary number of accounts, usually an amount that can be handled conveniently. Then, given this number, to select the accounts from the particular trays in an arbitrary manner. (The word *arbitrary* is not used here to mean the complete lack of a theoretical structure in determining the method of selection of the accounts.) On this basis then the accounts are aged. The assumption is made that the sample can be extrapolated to the universe and loss expectancy rates are then applied to each age category to compute an allowance for uncollectibles.

In contrast one of the first steps required in making a statistical application is the specification of the desired precision of the estimate and the level of reliability needed. Precision and reliability are the basis for the application of statistical sampling and these quantities must be stated by the accountant desiring the information. Once the precision and reliability are stated the sample design can be determined and the necessary sample

size and its method of selection developed. At each step of the way a body of theory dictates the procedure to be followed. The details of the aging application as well as a number of others have been written up in the book by Trueblood and Cyert, *Sampling Techniques in Accounting*, and no further details will be given here. The result, however, of this particular application should be noted. Basically, through the statistical techniques better information is provided upon which to base a decision. In this particular case better information, better in the sense that the precision and reliability of the information can be measured, is given to the accountant to determine the allowance for uncollectibles. In the case of an estimation of inventory the problem is one of using a statistical approach to estimate physical quantities without making a complete count. There have been a number of such applications and the problem is really almost a routine one at this point. The contribution to accounting here is, perhaps, not great—although again with the statistical procedure one has a measure of the precision and reliability of the estimate. In the case of the complete count it is clear that there are errors, but again, no one knows how many errors or what the limits of the errors might be. However, the main value of sampling, here, is a saving of resources in the measurement of income which is, even with a complete physical, only an estimate. Again the accountant is reminded that even though he is interested in the preciseness of his figures the income measurement is only an estimated figure.

In another type of application statistical sampling was used in lieu of a cost accounting system. In this particular case the organization was an extremely large one with many branches scattered throughout the United States. A large number of products were manufactured with the same machinery and same individuals during the day. A conventional cost accounting system would have been prohibitively expensive. In order to build up estimates of its cost for individual products the company had used a sampling scheme which was judgmental in nature. Plants were selected in a somewhat arbitrary fashion and the time periods selected for making the study of cost allocations were arbitrary. It was possible, using a statistical approach, to put in a sampling scheme which was continuous in nature and by which, at any point in time, the firm could get cost estimates for individual products. The sampling plan was designed to give these estimates on an annual basis with a particular precision and reliability.

If we were to summarize the ways in which statistics have been used we would say, first, that the major role of the application of statistics has been to provide better information to accountants, auditors, and management. In other words decisions have not been made in some automatic fashion by statistical techniques but rather statistical techniques have been used to provide better information for making decisions. It would be hoped that the decisions themselves as a consequence would be better. Secondly, statistical techniques have been used as substitutes for approaches which involve complete counting or other similar expensive operations so that in this sense there would be cost reductions involved in the use of statistical techniques. A third broad contribution which might be specified is that statistical techniques have been used in some sense to make certain operations of accounting and auditing more specific and definite. In this area one example is the problem of test checking. It is possible, through sampling, for the auditor to say in a more definite fashion how much of a sample should be taken and to specify the reasons why a sample should be of that particular size. The reasons will, of course,

involve his judgment of what the precision and reliability of the estimate should be. In addition the sample design must be specified and this design must recognize the theoretical structure of auditing.

Many more successful applications of statistics to accounting could be noted. It must be stated, however, that there are innumerable potential applications which, we feel, will be developed in the next few years. But even today there is little disagreement on the point that statistical techniques have a role to play in accounting.

Implications for Business School Curricula

The developments of statistical applications to accounting problems have been recognized in educational circles and, as a result, some attempts have been made to strengthen statistics courses and to use statistical techniques in advanced accounting courses. These are natural developments and lead in the right direction. However, we feel that they fail to provide as satisfactory a solution to the problem as a single integrated course. Accounting and statistics represent complementary approaches to common managerial problems. Either one used without the other is of limited value. It may be unfortunate that recent emphasis has been placed upon "statistical applications to accounting problems." This view has developed because accounting tended to precede statistics in its use by management in decision-making problems. Perhaps a better statement would be "recent applications of statistical techniques to managerial problems which have in the past been approached primarily from an accounting viewpoint."

New labels are not going to change the basic material. The important factor is that managerial decision-making requires an integrated accounting-statistics approach. As a consequence we believe the time has come to develop an integrated course for management students.

The Ideal Course

No attempt is made in this paper to develop the details of an ideal integrated course in accounting and statistics. The materials are not available so such an outline, though of interest as a curiosity, would not be of practical benefit today to the teacher who would like to give an integrated course.

The course outlined in the following section is a compromise between ideal and presently possible. It suffers on the integration factor because the materials for the most part must be taken from books in the two separate fields. The integration will have to be provided by the instructor to a greater extent than might be desired. The development of material such as cases and books which integrate completely the materials of the two fields will come as a result of the teaching of such courses using currently available material.

Although this paper does not develop the details of an ideal course, many aspects of such a course and in some sense the overall concept which ties the two disciplines together should be the concept of decision-making. Specifically there are three aspects of decision-making on which the course should focus. One aspect is that of management control where the specific problem is that the manager must have information which allows him to determine when a particular process is out of control and requires executive intervention. The out-of-control situation may be one in which the system is operating at a lower level than expected or one in which it is operating at a level better than expected. In either case executive intervention may be necessary. The second aspect of executive decision-making that would be involved in the course would be associated with decisions at the planning level, for

example, decisions involving pricing and output problems. The third aspect of decision-making involves decisions as to whether certain activities should be eliminated, other activities added, or other activities substituted for some currently involved. In short, the kinds of decisions that would be involved in new investment problems. These three types of decisions form the basis for the course outlined below.

A Practical Course Proposal

The course outlined below is a two semester course which presumes intelligent mature students who have had no previous training in accounting and statistics. It would be desirable although not mandatory that the students have had one year of college mathematics through calculus. The class would meet approximately three sessions a week for the two semesters, with additional laboratory sessions of two to four hours per week. A rough notion of the amount of time that might be spent on certain areas is indicated in the outline.

A COURSE IN QUANTITATIVE METHODS

Suggested Course Outline

I. Introduction (2 sessions)
   A. Concept of management control
   B. Decision-making at the planning level
   C. Investment decisions
II. Data Analysis (2 sessions)
   A. Concept of a distribution
   B. Measures of central tendency
   C. Measures of dispersion
III. Concept of Probability (4 sessions)
   A. Review of permutation and combination algebra
   B. Distinction between empirical and mathematical probability
   C. Definition of probability
   D. Calculus of Probability
IV. Probability Distributions (2 sessions)
   A. Discrete Distribution
   B. Continuous Distribution
V. Binomial Distribution (2 sessions)
   A. Derivation of mean and variance
   B. Fitting of binomial to data
VI. Poisson Distribution (3 sessions)
   A. Derivation from binomial distribution
   B. Fitting of Poisson to data
VII. Normal Distribution (4 sessions)
   A. Properties of the distribution
   B. Fitting curve to data
VIII. Measurement of Business Income
   Practice in interpreting and recording the financial results of actions as they are taken (the recording process) and the subsequent preparation of summary reports that show the cumulative financial results of past decisions and actions (the balance sheet and report of earnings statements).
   A. Basic Accounting Concepts (4 sessions)
   B. The Accrual Concept and the Income Statement (4 sessions)
   C. Transaction Analysis, Form and Preparation of Balance Sheet and Statements for Manufacturing Corporations (8 sessions)
IX. Auditing Process (3 sessions)
   A. Objectives of auditing
   B. Concept of internal control
   C. Sampling in auditing
X. Acceptance Sampling (5 sessions)
   A. Definition of single, double, and multiple sampling plans
   B. Calculation of probability of acceptance by hypergeometric, binomial, and Poisson
   C. Calculation of OC curve, AOQ, ATIN, for single sampling plan
   D. Use of Dodge-Remig tables and Mil-std 105A
   E. Definition of producer's and consumer's risk and method of deriving single sampling plan to meet the requirements
   F. Relationship with accounting and management control
XI. Financial Analysis (6 sessions)
   Giving meaning, at the executive level, to summary reports of the firm's financial condition. Practice in the use of analytical approaches to appraisal of the firm's financial condition and to preparation of meaningful explanations of observed changes. Ratio analysis, flow-of-funds analysis, pro forma statements, problems of changing price levels.
XII. Testing Hypotheses (8 sessions)
   A. Relation of producer's and consumer's risks to Type I and Type II errors
   B. Use of normal distribution, t distribution and f distribution in making tests of hypotheses

C. Use of contingency tables and the chi-square distribution

XIII. Management Control
- A. Controlling Operating Costs-Accounting Systems; actual costs, standard costs (6 sessions)
- B. Variance Analysis (2 sessions)
- C. Simple Correlation and Regression Analysis (3 sessions)
  1. Method of least squares
  2. Calculation of correlation coefficient
  3. Tests of significance for regression and correlation coefficients
  4. Extension to multiple regression
- D. Budgetary Procedures—Expense Budgets, Factory Cost Budgets, Operating Budget, Cash Budget, Financial Budgets (5 sessions)

XIV. Sampling Theory (14 sessions)
- A. Unrestricted random sampling
- B. Sampling for proportions
- C. Estimation of sample size
- D. Stratified sampling
- E. Ratio Estimates.

The first two sessions of the course would be devoted to a study and elaboration of the executive decision-making process. A good deal of information is becoming available on decision-making in organizations and reading can be assigned to the students in the area. The main objective in this introductory phase would be to give the students a brief background in decision-making. It would also give an opportunity to emphasize the aim of the course, which is to demonstrate how these two quantitative techniques, accounting and statistics, can be used individually and together as devices to aid in the decision-making problems of management. At the same time it must be emphasized to the student and in the teaching that accounting and statistics are *two* disciplines and *each* must be treated as a discipline. The student must face up to the fact that it is necessary to go deeply enough into each discipline so that he has an appreciation of the body of material that exists. This is in opposition to an approach which would pick out of each one of these areas certain techniques and certain approaches to be used in particular problems and never try to tie these up with the broader discipline or stream of knowledge involved. This point is a vital one in the successful teaching of such a course.

After the initial sessions on executive decision-making, some time should be devoted to the study of the organization and analysis of large masses of figures. Two sessions are provided on the concept of a distribution, on measures of central tendency, and on measures of dispersion. In this portion of the course, distinction between an empirical distribution and a mathematical distribution would be made, and different measures of central tendency and of dispersion would be discussed. The course would then continue with the concept of probability, including some review of the algebra of permutations and combinations. The instructor should distinguish between the relative frequency concept and mathematical probability and then go through the calculus of probability showing the conditions for the addition and multiplication of probabilities. Four sessions would be spent on this work. The next thirteen sessions would be devoted to the notion of a probability distribution and some of the specific distributions. There would have to be some discussion of discrete distributions versus continuous distributions, and a study of the binomial distribution, the Poisson distribution, and the normal distribution.

At this point, with the development of the normal distribution completed, the course would go back to the concept of control. By use of the notion of control charts, the role statistical control plays in management would be demonstrated. In all of this work problems involving accounting would be used. For example, in computing various probabilities one can use proportion of errors in the internal control system. Or one could use examples

of probability where there are different chances of particular strategies in the firm leading to particular levels of profit and try to compute the path that might have the greatest mathematical expectation. In the same way one can bring in here the notion of group depreciation and use the students' knowledge of statistical distributions to solve various problems of replacement. Basically this first section would be statistics, and one of the ways of tying up the two fields would be through the type of problem used and, in some cases, as with depreciation, showing that one can actually use this material in management. At this time, of course, the students would not have a complete appreciation of what was involved in depreciation. Only the briefest explanation of it would be made with the emphasis placed on statistical analysis.

After this much work in statistics, income for individual firms over time or income for groups of firms at a particular point would be introduced. This would include discussion and analysis to give reasons for the variation that would be present in the income figures. The students having a statistical background could measure this variation. With their background in economics there could be some discussion of the way in which general economic conditions might account for some of the variations. But, regardless of this fact, one would be driven back to the measurement problem of income. The question would then arise as to how measurements are actually made on this particular quantity.

At this point the course would turn to the accounting side and raise the question as to what is involved in income measurements. Approximately fifteen sessions would be devoted to the basic aspects of accounting. The series of cases assigned would have the effect of teaching the student the basic accounting identity and showing, after an explanation of the balance sheet and the income statement, the way in which different kinds of transactions would affect the two financial statements of the firm. The whole emphasis would be on working from a transaction, through the accounting system, to the effects on the balance sheet and the income statement. The effects on the financial statements would be tied up with the basic reason for going into the area, namely to understand something more about income measurement. In this process the students would, of course, study accrual accounting. The students would actually go through the whole bookkeeping cycle. They would study the form and preparation of the balance sheet and the income statement. They would have to record transactions and would learn the distinction between the journal and the ledger. At this point the student would begin to face up to accounting as a discipline. In line with the necessity of making the students face up to the discipline, it would be *very* important for the students to actually *know* how to make entries in a journal, and how to post to the ledgers, and how to adjust and close accounts. Among other topics covered in this section would be the distinction between period and product costs. The various methods for depreciation would be mentioned after going into detail on what depreciation is. The students would go into prepaid expenses, contra asset accounts, accrued liabilities, and the way these are handled on the books. There would be a fair amount of reference to the A.I.C.P.A. Bulletins. In short, we would be after a real understanding and ability to work with the accounting discipline. The emphasis would always be upon the student as a user of the information in relation to a decision-making problem rather than as a recorder and generator of information.

With the background developed, it

would be valuable to spend three sessions on a discussion of the internal control system of an organization, its relation to such factors as guaranteeing the integrity of the assets, and also the relationship of internal control to the implementation of managerial policies. Some time also would be devoted in these sessions to an introduction to the auditing process. An attempt would be made to give the student some notion of what is involved in the audit of an organization, the responsibilities of the auditor, and some insight into the differing philosophies of audit. There would also be an attempt to emphasize the relations between auditing and organization theory. At this point the course would move back into statistics and take the student into acceptance sampling by tying up the acceptance sampling notion to auditing, showing both how acceptance sampling notions can be used in the auditing process and also their weaknesses in the auditing process. About five sessions would be spent doing this. Definition would be given of the various sampling plans, showing some of the tables that are available and how to use them, showing how to calculate a tailor-made plan, and giving an introduction into sequential analysis. The problems used would be problems associated with auditing.

At this point, the question should be raised of how one judges the financial condition of a corporation from its financial statements. The problem first would be looked at from the standpoint of the accounting approach, raising the question again as to what kind of measurements would be relevant. The students would go through the conventional ratio analysis and flow of funds analysis. Again cases would be used as the major problem focus. The students would be expected to raise at this point the question of the meaning of these ratios—both with respect to the firm at a particular point in time and in terms of comparing firms. One would expect to get into the whole question of how many observations might be needed in order to establish a value for certain of these ratios and also the question might be raised as to whether certain differences between companies on particular ratios would be significant. It would be well to make sure that the substantive meaning of these ratios is adequately covered. Questions of this kind would serve as a basis for moving back into statistics and specifically into the subject of hypothesis testing. The class would go through the conventional tests. About eight sessions would be devoted to this. This discussion would relate the notion of producers' and consumers' risks of acceptance sampling to type one and type two errors in hypothesis testing. The use of the normal distribution, the t distribution, the f distribution in testing hypotheses as well as certain non-parametric tests would be covered. Again, the focus would be on problems. These problems would place a heavy emphasis on making statistical analyses of the financial condition of the firm so that the student would be using both his statistics and the knowledge that he had picked up on the financial analysis side.

The next area for study would be that of cost accounting. The transition from testing of hypotheses to cost accounting could be made in a manner similar to that previously used. Some of the problems in hypothesis testing could involve the concept of product costs. The statistical tests could be carried out and questions raised as to how product costs are measured in the firm. With this background a transition could easily be made to the area of cost accounting. At first one should try to point out some of the uses made of cost information in income measurement, emphasizing again the distinction between period and product costs and the distinction between process costing and job costing.

Then one could cover standard costs, the various variance accounts, and the ways of dealing with these variance accounts. Problems for study would again consist of a set of cases.

Then the class would move naturally into the general area of the analysis of cost accounting variances. Here, especially in the area of overhead variances, the whole problem of regression and correlation analysis would be opened up. Correlation and regression would be discussed at this point in the context of setting overhead budgets and computing overhead variances.

The next step would be to move on to a general discussion of budgeting. In the process of studying the control aspects of budgets, use would be made of the statistical notion of control developed earlier. Criteria would be developed to determine when the deviation of budget from actual would become serious enough to warrant investigation by management. Also, at this point, with the statistical background that the students would have, it would be possible to investigate methods of estimating the cost-volume relationship other than the conventional straight line approach taken by accountants.

Finally, the course would move back to statistics to discuss sampling theory. Here again, a good integration could be achieved between statistical analysis and accounting theory by utilizing some of the applications indicated earlier in this paper. Problems based on aging of receivables, inventory estimation, determination of a LIFO index, and confirmation of accounts receivable could be used. Consideration of the possibility of using a sampling plan to substitute for a cost accounting system could be introduced. As far as particular aspects of sampling theory are concerned, the discussion would cover unrestricted random sampling, stratified sampling, and the use of ratio estimates. This topic would be the closing area.

Conclusions

It is easy to see some of the weaknesses in the course as outlined here. One obvious danger is that the student may get confused by the continual shifting back and forth from one discipline to another. While granting that this is a danger, by making the proper transitions these shifts could seem quite natural. Another weakness, perhaps, is that in some areas the merger is on an artificial plane, and, with additional critical thought one can see other difficulties in the approach. However, the major advantage of such an approach is that the student no longer thinks of accounting and statistics as two separate areas that have no logical relationship. Instead the student should see the two fields as capable of making a contribution to a common problem. We believe the motivation of the students in such a course would be somewhat higher than in courses taught in the usual separate way. The reason for this belief in the higher motivation is that at every point in the course the whole orientation would be toward specific problems, in a way not possible by offering the courses separately.

A further advantage in the integration of the courses lies in the increased learning that should result. This will be effected, we believe, by the constant reinforcement of the learning process. By utilizing in the statistics area the material the student has learned in the accounting area, and vice versa, the total learning should be increased. This same result could, of course, be achieved when the courses are taught separately. Unfortunately, however, because of a variety of reasons, such as lack of communication between faculty members, it is our belief that the advantages of this constant reinforcement are not gained.

It is also clear that the student following a management career rather than an accounting or statistics career will be faced

with problems in which both disciplines are involved. It is important that he face some problems of this kind in his training.

In addition to the emphasis on decision-making, ideally it would be desirable to stress the notion of the accounting system as an information system within the organization and to point out the role that electronic computers can play in making the information system more efficient. However, these are problems that are not central to the main stream of the approach we have taken.

Some modifications of subject matter and time allocation may be desirable in specific cases, of course. Each instructor must fit the course to his interests and situation.

We used specific subjects and times to provide a concrete proposal which we believe demonstrates that it is feasible today to offer an integrated course which does not water down either the accounting or statistical materials. In fact we believe that the proposed course would give the student a much higher level of understanding of both disciplines than he obtains in most introductory courses.

THE INTEGRATION OF STATISTICS AND ACCOUNTING

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There is definite evidence in accounting periodicals of an increasing interest in the uses of statistics, especially statistical sampling techniques, in accounting. The proponents of the use of statistical techniques in accounting have presented their arguments so convincingly that many have accepted as a logical extension the idea that accounting and statistics should be merged or integrated. If such a merger is to take place, it is argued further that Schools of Business should clear the way by presenting the two in an integrated course.

To make my position clear, let me state that I definitely feel that accountants should know and apply statistical tools in their work wherever applicable. Hence, accounting students should be taught the applications of statistics to accounting. But I do not think that this is best accomplished by merging the two fields into one course at the undergraduate level.

The courses offered as a result of such a merger are generally designed for presentation to students in the early stages of their business education. These courses seem to have as their objective the acquaintance of the student with accounting and statistical techniques so that he might apply these techniques in certain business situations.

From the area of accounting, the student is acquainted with such matters as the basic accounting cycle, analysis of annual reports, standard costs, and budgeting, among others.

Probability, the normal curve, correlation and time-series analysis, and statistical forecasting are the statistical techniques usually included.

There is no doubt in my mind that, by means of such courses, the student will become acquainted with these techniques. There is, however, quite a bit of doubt as to the student's acquiring an ability to apply these techniques to business situations.

There seems to be a growing tendency in our educational efforts to emphasize the application of techniques and the interpretation of results with the implication that the techniques themselves and the getting of the results are sort of automatic or inbred in the student. But they are not. Techniques must be mastered before they can be applied. Results must be properly obtained before they can be interpreted.

It seems to me that such courses brush lightly over the fact that it takes much time and effort for a student to understand the implications and interrelationships of both accounting data and statistical data. And part of that understanding comes from knowing how and why the data were obtained. To me, this implies more than a passing knowledge of techniques.

This is possibly truer in statistics than in accounting. For example, how an expense such as wages is recorded will not change the fact that it is an expense. Hence, anyone seeing the item "wages" on an income statement can have a fairly good understanding of what it means. However, this is not so in the case of averages. Whereas the character of wages as an expense does not depend on how those wages are recorded, the character and use

of an average depends entirely on how it was calculated. The average we know as the arithmetic mean is quite different from the average we know as the median.

One must know how an arithmetic mean is calculated if he is to understand the implications of using it. One must understand fully what he has done in getting a regression line in correlation analysis if he is to avoid coming to utterly ridiculous conclusions. A student gets an understanding of the implications of these statistical techniques by studying them thoroughly —not by just becoming acquainted with them in a hurried manner.

In short, the point is that I do not think that a student will, as a result of such courses, comprehend what he is doing—either in accounting or in statistics. He won't learn enough accounting to serve as a foundation for further accounting courses; he won't learn enough statistics to use statistics in his accounting work; and he won't learn enough of the combination to use anywhere.

Actually, I am more concerned about the fact that the prospective accounting major will not learn enough statistics from such a course than I am about his not learning enough accounting. He will have more accounting courses, several of them. But most of his formal statistical training will be completed with the proposed course. As much as I think that the accountant can use statistical devices in his work, I would much rather see him struggle along without them than to have him use them improperly to obtain erroneous bases for decisions.

There is also the possibility that the student will take away from such a course the idea that accounting is not a separate branch of knowledge; that it is not useful by itself, but only in connection with other tools; that it makes no unique contribution to the successful operation of an enterprise. Such a point of view is patently unacceptable to accountants.

But if merging accounting and statistics is not the answer to the question of increasing the accountant's contribution to the business enterprise, is the implication then that statistics has no place in the accountant's sphere of activity? Certainly not! By all means the accountant should use statistical techniques whenever such techniques will prove useful in his work. He always has.

A brief survey of some of the material taught in the first year or two of accounting will yield many instances of statistical applications. A few of these are:

1. The calculation of the percentage to be used in estimating bad debts. (Averages.)
2. Aging of accounts receivable and analysis of outstanding accounts by district, territory, or type of customer. (Cross classification.)
3. Weighted or moving average inventories.
4. Partners' average investment.
5. Retail inventory on LIFO basis. (Index numbers.)
6. Depreciation methods. (Hybrid averages.)
7. Statement analysis. (Ratios, averages.)
8. Break-even analysis. (Correlation.)

These items are such a familiar part of accounting that one has difficulty recognizing them as being related at all to anything students might learn in statistics classes. But there is such a relationship, and these devices are completely accepted by accountants as serving a sound accounting purpose. It really is not such a big step to the use of other statistical techniques, e.g., sampling in auditing, or the application of index numbers in the meas-

urement of price-level change effects on financial statements.

How can these statistical applications be brought to the student? The obvious starting point is with the basic statistics courses offered in Schools of Business. We must use as much influence as we have to see to it that the accounting students actually get a good grounding in statistics from the basic course. This involves seeing that the students know not only how to obtain a particular measure, but also why it is obtained, the effects on its usefulness of the way in which it is obtained, and a general idea of how it can be applied—as well as an awareness of the fact that it can be applied.

Granted that we are reluctant to make many suggestions to teachers in other fields as to what and how they should teach, nevertheless, if accounting students are going to make use of statistics at all, it goes without saying that they first must learn something about statistics. If they do not get a good basic course in statistics, there is not much point in talking to them at all about the advantages of sampling or other techniques in auditing or any place else.

But if the student does get what he needs from his basic statistics course, what then? Should he have further courses in statistics? If so, who should teach them? Or should the statistical applications be introduced to the student in his regular accounting courses?

Assuming that there is to be a special course in statistics for the accounting student, should the teaching be handled by an accounting teacher who knows something about statistics, or rather by a statistics teacher who knows something about accounting? With certain possible exceptions because of the individual involved, it would seem better to use a statistics teacher who knows something about accounting. I feel that such a teacher can more readily fill in his accounting background than the accounting reacher can fill in his statistical background.

As to having a separate statistics course for accounting students, there should not be much of a problem involved. Marketing people have their courses in marketing research, including a wealth of statistical applications. Economics departments have statistics courses for economists. In fact, most of the courses which serve as basic courses in "Business Statistics" are handled by economics departments. It doesn't seem at all strange to me that there should be a statistics course designed for accounting students.

As an alternative to a separate course, it has been suggested that accounting teachers introduce the application of statistical techniques into their regular accounting courses at those points where the uses of these techniques would be appropriate.

But we all find it difficult enough to cover adequately all the material now in our accounting courses without adding more. There is the additional difficulty that, while the student is trying to get the point of the application, he may well forget the main purpose of the accounting course, the accounting content. In a separate course, he can spend all the time he needs to understand how a particular application works so that he can blend it into his accounting course himself.

There is an additional problem in the approach of including these applications in the regular accounting courses. That is the lack of the necessary statistical training on the part of many accounting teachers. As Paul Fertig and Morton Backer suggested in their recent article in THE ACCOUNTING REVIEW,[1] part of this difficulty could be overcome by a series of seminars for the purpose of training ac-

[1] Morton Backer and Paul E. Fertig, "Statistical Sampling and the Accounting Curriculum," THE ACCOUNTING REVIEW, Vol. XXXIII, No. 3, p. 415.

counting teachers in these statistical techniques.

But for my own part, I would rather see the job done in a special course for accountants in the use of statistical applications to accounting; a course taught to accounting students who have had a basic course in statistics and enough accounting to appreciate the course. In their regular accounting courses, then, their instructors could refer to these applications without the necessity of teaching the basic techniques.

In this way, the accounting student would be prepared to do his own merging of accounting and statistics to resolve a particular business situation. He would remain an accountant using statistics as a tool in his work just as he uses his background training from other fields. To me, this is as it should be.

MANAGEMENT ACCOUNTING: CONTENT AND APPROACH

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SUCH phrases as "management accounting," "managerial approach," "managerial cost accounting," "managerial accounting," "accounting for decision-making," and "management-oriented accounting," are used rather frequently these days in business education and its periphery. Because of the confusion which arises from the use of these terms, it seems appropriate and worthwhile to examine these phrases and to attempt an explanation of some different types of accounting education.

Accounting and the Academic Environment

The field of accounting is distinctively unusual in its academic setting. Accounting may be utilized in a service capacity for schools of arts and sciences and for other professional schools such as law, medicine, pharmacy, and engineering; it may constitute a major area of study for degree purposes or serve as a "core" for general business training; and accounting itself may be an area for a separate professional school.

These various academic settings indicate to some extent the range of roles which the broad field of accounting plays in the business world, i.e., service, function, profession. Roughly, the analogy between the academic setting and the business setting is as follows: tool for management decision-making (service), controllership (function), and public accounting (profession).

The *content* or subject matter of accounting courses is, or should be, influenced most by the role these courses are to play in the academic setting, which in turn is probably dependent largely upon the eventual role in the business world. The old adage that "the choice of accounting data depends upon the use to which they are to be put" is true also of accounting course content. The choice of course content should depend upon the role the course is to play or the purpose it is to serve.

The *approach* to accounting learning is strongly dependent upon the intellectual caliber and age of students, in addition to the role accounting is to play in the academic program. Educational approaches to accounting vary with general objectives and admissions policies, and with the fact that students are graduates, advanced undergraduates, lower division undergraduates, or in-service managers or professional personnel. Approaches necessarily vary with the class year in which the student takes the particular course; maturity is an important factor in determining the appropriate learning approach. Approaches in management development programs should differ from those in graduate and undergraduate programs.

Accounting Course Content

Traditionally, accounting has been dichotomized by subject matter into financial accounting and cost accounting. Emphasis upon these two branches is sometimes described as the public accounting *approach* and the private, industrial, management, or managerial accounting *approach*, respectively.[1] The description of

[1] In common usage, management accounting is ordinarily thought to mean cost accounting. For example, the terms private accounting, cost accounting, and

these two subject areas as alternative *approaches* leads to much confusion about accounting programs. It is perhaps best to reserve the term "approach" for the manner in which the subject matter is taught and learned in the classroom and discussed in the textbooks. Alternative *approaches* to the study of accounting are discussed at a later point in this article.

The sequence of courses for these two branches of accounting is often as follows:

Financial Accounting	*Cost-Management Accounting*
Introductory Financial Accounting	
Intermediate Financial Accounting	Cost Accounting
Advanced Financial Accounting	Budgeting
Auditing	Controllership or Administrative Accounting
Accounting Theory	
Advanced Accounting Problems	
Taxation	

The sequence for financial accounting rather closely parallels the subject areas of the C.P.A. examination. This fact perhaps explains the description of financial accounting by some as the public accounting approach. Undoubtedly, the financial accounting emphasis obtains much of its popularity among educators from the academic respectability lent by the C.P.A. certificate and the prestige of the public accounting profession.

The cost-management accounting sequence which culminates in controllership does not, on the other hand, have the capstone of a professional license similar to the C.P.A. certificate. The absence of this symbol of competence, plus the fact that subject matter of the cost-management accounting sequence is but a part of the broad area of accounting, sometimes makes this subject area less popular among educators and students interested in accounting.

The bulk of cost accounting, for example, is typically an elaboration of one item on the income statement, namely, cost of goods manufactured and sold, and the emphasis is usually upon product costing. Only rather recently have extensions of cost accounting techniques to expenses other than manufacturing expenses become a part of cost accounting.

The more traditional cost accounting does not emphasize costs for decision-making or choice among alternatives, and frequently this topic utilizes partial analysis which considers costs only and ignores considerations of revenue, financing, etc.

At the present time, one of the impending developments in cost-management accounting would seem to be enlargement of scope and subject matter. The cost *system* emphasis for purposes of product costing and providing cost information for day-to-day control by industrial management is being joined by a broader treatment of choosing among alternatives. This use of general rather than partial (cost) analysis is encouraged by the developments in electronic data processing, "management science," mathematical and statistical applications, and the "economic analysis" work being done in controllers' departments of larger business firms. These developments will undoubtedly continue to raise questions about the content-boundaries of business school courses. With the incorporation of these sorts of things into the cost-management accounting sequence, cost accounting is probably more appropriately described as *management accounting*.

The financial accounting sequence is also being influenced by these developments as public accounting firms continue to expand the management advisory services area and to extend the use of statistical and mathematical techniques in the auditing area.

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management accounting are used synonymously in *Occupational Outlook Handbook*, 1957 Edition, U. S. Department of Labor, Bureau of Labor Statistics (U. S. Government Printing Office, Washington 25, D. C.).

It is not unusual that at least one course in financial accounting precede the cost accounting sequence. This seems necessary in order to give the student insight into the nature of the accounting data which he will be dealing with in the cost-management accounting sequence of courses. The purpose for which the data are used represents an important difference between the two areas of accounting. Cases and problems in the cost-management sequence deal largely with matters of accounting policy and practice for *internal* purposes, whereas those in financial accounting emphasize *external* reporting and verification matters. Regardless of the purpose, a considerable understanding of the accrual method of accounting, the debit and credit model, and the end-products of the accounting mechanism is a necessary prelude to the pursuit of either branch of the accounting dichotomy.

To sum up, the content of management accounting as an expansion of the narrower cost accounting appropriately includes accounting policy and internal applications of the use of accounting data for such items as day-to-day decisions by management personnel, choice among alternatives, and "economic studies," as influenced by evolving developments in electronic data processing, "management science," and mathematical and statistical applications. The term management accounting more properly implies course *content* rather than learning, teaching, or textbook *approaches*.

Approaches in Accounting Education

It was suggested in the preceding section that the distinction between financial accounting and management accounting might best be made on the basis of course *content*. Approaches in accounting education might be classified in at least three categories which may be called the survey approach, the technical-professional approach, and the analytical approach. The approach which is utilized successfully in a particular academic situation probably depends upon age and intellectual calibre of the particular student and somewhat upon the purpose which the accounting courses are to serve.

Courses which utilize the survey approach are the familiar "service" courses found in undergraduate programs. Content in these courses often consists of both financial accounting and cost accounting. Such an approach attempts to give the student some general familiarization with the accounting process and its end results, emphasizing neither the technical aspects nor the conceptual depth necessary for adequate insight into the nature of accounting data as used in the more complex analysis situations.

The technical-professional approach involves rather extensive use of the recording steps of journalizing; posting; and preparation of adjusting, closing, and reversing entries, worksheets, and financial statements. Problem and case material often emphasize recording and systems aspects and frequently deal comprehensively with all possible aspects of a topic with the goal of technical competence. Problems, exercises, and practice sets are used extensively in an effort to develop the proficiency of a technician.

Because of the extensive need and use of schedules, working papers, and summaries in the auditing facet of public accounting, this classroom approach is sometimes described as the public accounting approach. The technical-professional approach may also be utilized in courses in the cost-management accounting sequence as well. Journalizing, posting, preparing of cost statements, and compiling budget schedules are examples.

There are, of course, differences of opinion about the most efficient learning process for accounting. Advocates of the

technical-professional approach maintain that the student cannot attain a high degree of mastery of accounting without frequently experiencing the recording steps involved in the accumulation of accounting data and studying all the technical details involved in the topic at hand. The debate over whether or not technical proficiency is the sole means to enhance conceptual depth and a thorough understanding of the nature of accounting data, their appropriate use, and the end products of the accounting process is probably as old as formal accounting education itself. Some "mechanics" are probably unavoidable in any event. Since this approach is the usual approach for undergraduate business school courses in accounting, the solution to this controversy probably depends upon the admission policies of the particular business school as well as age (i.e., class year) of the students in the course. The opposite of emphasis upon "mechanics" is dealing in the abstract. It is reasonable to suggest that the more mature and intellectually capable students need less experience with these recording steps for mastery of concepts and abstractions.

The analytical approach (rather than the technical-professional approach) is the approach utilized in certain M.B.A. programs such as those found at what have been described as exclusively graduate schools of business.[2] The goal is to instill insights into the nature of accounting data, to acquire skills in their use in internal and external business applications and analyses, to become thoroughly familiar with the end-products of the accounting process and to know and understand alternative accounting policies and practices and their effects. Because of the greater maturity of graduate students compared with undergraduates, this goal is attainable with a minimum of mechanics. Older students are better able to deal in the abstract and to grasp concepts with minimum experience in the recording and systems processes of accounting. Although such an approach emphasizes depth, it does not strive for the mastery of the more detailed technical aspects.

The small number of business schools at which this approach can be utilized successfully, together with the individual variations at these schools, frequently necessitates the use of special syllabus and case material rather than the textbooks emphasizing a technical-professional approach. There are at the present time few textbooks which work well for this approach. (There are several textbooks which are labeled "a managerial approach." Most of these, however, are survey-type texts which do not contain the depth desired in programs utilizing the analytical approach.)

An example of the analytical approach is the accounting program at the Stanford Graduate School of Business. The first quarter (which in this case is ordinarily the student's first exposure to accounting) culminates in the study of the consolidation of financial statements. The second quarter is devoted to analysis of variation and change; cost accounting, including standard cost variance analysis, etc., and problems of alternative choice. Although the emphasis is upon the use of accounting in business management, there are elective courses in *both* the financial accounting and the cost-management accounting sequences. In this way the accounting curriculum is designed to fit the role of accounting as a service (tool for management), as a function (controllership), and as a profession (public accounting).

Because of the usual emphasis upon

[2] See, for example, R. A. Gorden and J. E. Howell, *Higher Education and Preparation for Business*, Columbia University Press, New York, 1959, Ch. 2. In this study, business schools are classified as: "exclusively undergraduate," "comprehensive or multipurpose," and "exclusively graduate."

management at exclusively graduate schools of business, accounting courses in these programs are often called management accounting, managerial accounting, or the managerial approach to accounting. It is suggested here that course *content* and the sequence of cost accounting, budgeting, controllership—as enlarged to include recent developments—are appropriately called management accounting; the de-emphasis upon technical refinements is more accurately described as an analytical approach. Thus, both the financial accounting and cost accounting branches of the accounting dichotomy may utilize the analytical approach to learning. It is apparently true, however, that most exclusively graduate schools of business which utilize this approach emphasize the cost-management accounting sequence or use it entirely.

Changes in Course Content and Emphasis

There is presently considerable discussion in business education circles about the content and description of accounting and related courses. Among other things, developments in electronic data processing, analytical work by larger business firms, the popularity of "management science," and the increased use of statistical and mathematical techniques in business are contributing to this reconsideration of accounting course content in business school curricula.

These influences affect both financial accounting and cost-management accounting. In public accounting, in which role the financial accounting sequence is so important, these developments rather nicely parallel the growing interest and participation by public accounting firms in the area of management services. At least one major undergraduate business school has considered the development of a management advisory services course for the curriculum. The use of statistical techniques in sampling has, of course, been in vogue for some time in public accounting.

Probably the most dramatic developments and impending changes resulting from these influences is in the field of cost-management accounting, i.e., the internal use of accounting. In the academic setting the expansion of cost-management course content to absorb these developments is hampered, among other things, by (1) lack of textbook, case, and problem material,[3] (2) qualified faculty to teach the material, and (3) uncertainty as to definition of course lines and curriculum organization.

The mathematical and statistical developments as a part of accounting are not surprising when it is recalled that the double entry debit and credit model was first expounded in a mathematical treatise.[4] The quasi-statistical nature of accounting data has been recognized for some time.[5] In traditional cost accounting, for example, the study of quantitative production data in dollars is often identified as cost *accounting;* its study in units is frequently referred to as *statistics*. The study of distribution costs which, unlike production costs, are usually not "systematized," is often referred to as statistics, or statistical costs.

One possibility for expanding the curriculum to include these developments is the "integrationist philosophy" which seems to aim for a science or methodology emphasis. It is suggested, for example, that the techniques common to both financial accounting and cost-management accounting be combined and described in a way

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[3] Mr. James W. Leisner, Partner, Peat Marwick Mitchell and Company, Los Angeles also noted the impending effect of the lack of cases upon education and developments in management services in a presentation before the San Francisco Chapter of the California Society of C.P.A.'s on January 21, 1959.

[4] In Luca Paciolo's *Summa de arithmetica geometria proportioni et proportionalita* (1494). See A. C. Littleton, *Accounting Evolution to 1900*, p. 63. (New York: American Institute Publishing Co., Inc., 1933.)

[5] See, for example, Robert K. Mautz, "Accounting and Statistics," The Accounting Review, Vol. 20, October, 1945, pp. 399–410.

which emphasizes the technique rather than the role or use. An example is the combining of internal auditing aspects of controllership with related topics in auditing (financial accounting) and describing it as "account verification." A similar development is the combining of electronic data processing, systems, and the internal control aspects of financial accounting and cost-management accounting and describing it as business information and control systems.

The "integrationist philosophy" has been extended in some instances beyond the traditional accounting boundaries to such an extent that *any* methodology or analysis involving dollars or quantities is included. Such an integrated course may include something from accounting (the bulk), finance, marketing, production, statistics, etc. The description of such a course as a quantitative methodology or tool course, indicates the emphasis upon "science" and technique rather than upon role or setting. What is often described as integration, however, is really an alternation, and if carried far enough may easily become a hodge-podge of rather unrelated subjects. There is undoubtedly considerable room for combining similar and related techniques now found in the separate courses of a business school curriculum. Considerable progress must be made in textbooks, case and problem material, and the attitudes of faculty and administrators before this can become a major development in colleges and universities.

The lack of textbooks which fit such combined courses necessitates the substantial use of cases. Accounting, it should be noted, has not become embroiled in the academic controversy over the use of cases in business courses. This is because of the nature of accounting subject matter in contrast with subject areas of many other business education courses. A case is a situation-oriented problem and accounting education has long made extensive use of problems which are situation-oriented. As subject matter included within the course entity becomes more diverse, cases and problems will become more important because of the difficulty of generalizing about diverse matters in textbook narrative.

The developments and changes which are affecting or will affect accounting in the academic setting are truly exciting. In its usual manner, it can be anticipated that the academic fraternity will move cautiously, yet deliberately, in assessing and adopting changes caused by the dynamic business world. The 1959 American Accounting Association convention session on "The Forward Look in Management Accounting" was indeed a timely topic and provided an excellent opportunity for the exchange of ideas among accounting professors teaching courses of differing *content* under different *approaches*.

AUDITING STANDARDS AND THE LAW

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AUDITING standards indicate the levels of performance which must be attained in order to fulfill professional requirements for satisfactory audit work. The profession has been working for many years to establish standards in the field. The first publication concerned with standards, *Uniform Accounting: A Tentative Proposal Submitted by the Federal Reserve Board*, was prepared by the American Institute of Accountants (now the American Institute of Certified Public Accountants) and published in 1918 by the Federal Reserve Board. The most recent authoritative publication, *Generally Accepted Auditing Standards*, was prepared by the Committee on Auditing Procedure of the AICPA and published in 1954.

The purpose of this study is to determine whether auditing standards are in agreement with the law and to suggest areas in which the profession should strive to improve the standards. In brief, it appears that (1) not all auditing standards have been the subject of litigation, (2) no standard is in direct conflict with the law, and (3) all are to some extent supported by the law. Standards which are more specific than exist at present are needed to satisfy professional and legal needs.

The public, in deciding what reliance to place on accountants' reports, considers the reputation of the profession and the professional standing of the practitioners or firms which signed the reports. The public is protected against accountants' mistakes flowing from the failure to observe auditing standards because of their self-policing nature. Those firms which do not follow the standards will tend to lose their reputations and the public will not request service from them.

Public accountants whose reports and/or work is challenged will (1) refer to *Generally Accepted Auditing Standards* mentioned above, (2) request statements from fellow practitioners as to appropriate conduct in the same or similar, and (3) review comments made in decided cases, to aid in establishing the adequacy of their work.

The public accountant needs to be concerned with standards since failure to follow them may serve as evidence of a lack of due care in performance of his work, breach of his audit contract, or negligence. He may be held liable by the law for damages suffered by a client or other party who relies to his detriment on the accountant's work and/or report.

The law has never incorporated the set of rules or standards of a particular group as the sole criteria by which the actions of the members of that group are to be judged. Where authoritative pronouncements or other publications are available, the law may refer to such in determining what would constitute acceptable conduct. The position of auditing standards in the law cannot be ascertained exactly as of a given moment of time as the statutes and decided cases do not cover all areas and the law tends to lag behind the development of professional standards and requirements.

Both the courts and the Securities and Exchange Commission have to some extent considered auditing standards. Statutory law exists with respect to certain standards. The statutes and court decisions represent law applicable to the work of auditors generally. The SEC regulations and decisions have the force of law with respect to practice before the SEC. The

SEC requirements, though they have specific application only to practice before the SEC, have helped raise the level of practice generally.

The public accounting profession should lead the way in the formulation of auditing standards so that persons qualified by experience and training in the potentials and limitations of audit work will be developing the standards and so that the entire area of professional practice can be covered as an integrated unit. The alternative to this approach is likely to be the establishment of standards by persons with limited knowledge of auditing, the development of standards on a piecemeal basis, leaving some areas without standards temporarily or permanently, and the enforcement of rules which differ with the legal jurisdiction in which the parties reside.

The standards promulgated by the AICPA are generally accepted by the public accounting profession and have been referred to by the law as criteria to use in ascertaining what constitutes acceptable conduct in audit engagements. These standards are the ones currently in use and are the ones that will be reviewed. They are based in part on legal concepts and in part on what the members of the profession consider desirable professional conduct.

These standards are divided into three groups: personal, conduct of field work, and reporting, and will be reviewed in that order. The legal or quasi-legal (SEC) support for each will be noted and an indication given as to whether or not the law and the standards appear to be in agreement.

Compliance with Standards

Insistence on compliance with auditing standards has been voiced by the SEC in one of its releases, as follows:

> Where accountants certifying financial statements referred to in offering circular failed to examine branch offices, *held*, representation that accountants' examination was in accord with generally accepted auditing standards was materially misleading.[1]

In a 1956 Federal District Court case concerning a large defalcation, reference was made to generally accepted auditing standards and their application to work done by auditors employed by the Bureau of Federal Credit Unions of the Federal government.

> In 1952 the government clearly failed to follow generally accepted auditing standards . . . Plaintiffs called as expert witnesses Maurice E. Peloubet, C.P.A., of New York, and Louis A. Judges, C.P.A. of Baltimore. These witnesses testified that in their opinion the examiners and their supervisors were negligent in not recognizing such red flags as the attempts of Mrs. Ringrose to postpone the examinations, her reluctance to produce records. . . . These criticisms were made from the point of view of certified public accountants . . . Plaintiffs' experts applied too high standards in judging the performance of the examiners. They applied standards applicable to the major leagues, whereas, because of salary limitations imposed by the budget, minor league standards would be more appropriate.[2]

PERSONAL STANDARDS

Training and Proficiency

The first personal standard of the AICPA states:

> The examination is to be performed by a person or persons having adequate technical training and proficiency as an auditor.[3]

The auditor in complying with the training and proficiency standard represents that he has the degree of skill commonly possessed by others in the profession and also that he has the ability and an adequate degree of skill to perform successfully each task that he undertakes.

The law has training requirements

[1] *Coastal Finance Corp.*, Securities Act of 1933 Release No. 3775, (April 10, 1957).

[2] *Social Security Adm. Baltimore Fed. Credit Union v. U.S.*, 138 F. Supp. 639 (Md. 1956).

[3] *Generally Accepted Auditing Standards*, American Institute of Certified Public Accountants, New York, New York, 1954, p. 13.

which vary by jurisdiction. In order to (1) promote uniformly high standards of practice and (2) assure that persons entering the profession regardless of location have had adequate preparation, it would be desirable for the profession to take the initiative in determining what standards as to training and experience are desirable and then work toward obtaining CPA statutes which include such requirements.

A recognized authority on the law has stated the duty of persons employed by others as follows:

> Every man who offers his services to another and is employed, assumes the duty to exercise in the employment such skill as he possesses with reasonable care and diligence. In all those employments where peculiar skill is requisite, if one offers his services, he is understood as holding himself out to the public as possessing the degree of skill commonly possessed by others in the same employment, and if his pretensions are unfounded, he commits a species of fraud on every man who employs him in reliance on his public profession.[4]

The qualities an auditor should bring to a job were stated more than 60 years ago by the English judge, Lord Justice Lopes:

> It is the duty of an auditor to bring to bear on the work he has to perform that skill, care, and caution which a reasonably competent, careful, and cautious auditor would use. What is reasonable skill, care and caution must depend on the particular circumstances of each case.[5]

Adequate technical training includes the education and practical experience which an auditor must have. State laws governing admittance to the C.P.A. examination, issuance of C.P.A. certificates, and licenses to practice are concerned with both of these standards and vary widely as to their requirements.

The public accounting firm which employs assistants is concerned with this standard not only as to the partners of the firm but also as to its employees. In one situation the SEC commented unfavorably when it found that the public accounting firm's staff consisted of a very high proportion of temporary employees during the short busy season and that the firm's methods did not give adequate training to its employees.[6] The SEC investigated another case in which material overstatements of assets and earnings resulted from a senior accountant's falsification of audit work papers and report drafts. The methods used by the public accounting firm in recruiting the senior were reviewed. No adverse comment was made when it was found that he was a university graduate, had had eight years of public accounting experience, was interviewed by the firm, and was highly recommended by his former employer.[7]

In order to ascertain the proficiency of an auditor, the courts have resorted to an examination of the work done in specific situations. In a New York case which considered the choice of audit procedures, a lack of proficiency on the part of certain auditors was indicated because they failed to (1) compare the items on the deposit slips with the items recorded in the cash receipts records, (2) check for kiting by tracing cash transfers at or near balance sheet date to records for both the drawer and payee bank accounts, (3) ascertain the number of the last check drawn during the fiscal year and (4) note that check numbers were used out of sequence.[8]

Independence

The second personal standard relates to the auditor's independence from his clients and other interested parties.

> In all matters relating to the assignment an

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[4] Cooley, Thomas M., *A Treatise on the Law of Torts*, Fourth Edition, Callaghan and Co., Chicago, Illinois, 1932, Vol. 3, Sec. 472, pp. 472, 3.

[5] *In re Kingston Cotton Mill Co.* (1896), 2 Ch. 279 (C.A.).

[6] *McKesson & Robbins, Inc.*, SEC Accounting Series Release No. 19 (Dec. 5, 1940).

[7] *Interstate Hosiery Mills, Inc.* 4 SEC 706 (1939).

[8] *National Surety Corp. v. Lybrand*, 256 App. Div. 226, 9 N.Y.S. 2d 554 (1st Dept. 1939).

independence in mental attitude is to be maintained by the auditor or auditors.[9]

Independence involves freedom from control or domination by another party and the absence of a personal interest which might improperly affect decisions to be made. One must be separate and apart from the parties to whom he renders service if he is to be independent. He must be willing and able to insist on a course of action which his judgment as a professional person tells him is the correct one in a given circumstance. Independence is basically a state of mind which enables a person who possesses that attribute to render objective judgment in situations in which he is to render opinions. The C.P.A. must not only be independent with respect to listening to the counsels of other parties, but he must have no personal interest in the outcome which might tend to affect his judgments.

Both the public accounting profession and the law properly insist on the public accountant's independence in audit work. The profession states its representations as to independence in *Rules of Professional Conduct*[10] and in the personal standard noted above. The law, by statute[11] and SEC regulation[12] requires independence as to work done and reports rendered in connection with certified financial data filed with the SEC. The legal requirement covers primarily practice before the SEC. In order to minimize the possibility of bias in work performed and reports prepared, it would be desirable to have independence required by statute with respect to audit work in general as well as in SEC practice.

Exercising Due Professional Care

The third personal standard of the AICPA concerns the degree of care the public accountant must exercise in the conduct of his audit work. "Due professional care is to be exercised in the performance of the examination and the preparation of the report.[13] Due professional care is concerned with the quality of the work done—employment of generally accepted auditing procedures and their application with professional competence by trained personnel. The legal concept of due care has been quite properly accepted by the profession as one of its standards. However, there is some difficulty in applying this concept in actual situations. It would appear that the profession could help overcome this problem if examples were to be given as to what conduct meets and what fails to meet the standard.

Due care has been defined as: "Due care is such attention and effort applied to a given case as the ordinary prudent man would put forth under the same circumstances."[14] The Courts have taken specific situations in ascertaining what constitutes due care, and these have usually been extreme ones in which absence of due care is quite evident from an examination of the facts. The degree of care required depends upon the terms of the audit agreement and the status of a complaining party as client, primary beneficiary of the audit contract, or third party. Usually greater care must be exercised with respect to the client than with respect to third parties.

The English courts have been helpful in establishing the care accountants must exercise. In one case it was stated:

An auditor, however, is not bound to do more

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9 *Generally Accepted Auditing Standards*, op. cit., p. 13.

10 American Institute of Certified Public Accountants, New York, New York, 1958, pp. 14–15.

11 *Securities Act of 1933*, 48 Stat. 74 (1933), 15 U.S.C. 77 (aa) (1952), *Securities Exchange Act of 1934*, 48 Stat. 881 (1934), 15 U.S.C. 78 (1) (b) I (1952), *Public Utilities Holding Company Act of 1935*, 49 Stat. 838 (1935), 15 U.S.C. 79 n (1952), *Trust Identure Act of 1939*, 53 Stat. 1149 (1939), 15, U.S.C. 77 nnn (a) (2) (1952), and *Investment Company Act of 1940*, 54 Stat. 789 (1940), 15 U.S.C. 80a (1952).

12 *Regulation S-X*, Rule 2-01b, United States Securities and Exchange Commission, Washington, D. C., 1958, p. 2.

13 *Generally Accepted Auditing Standards*, op. cit., p. 13.

14 *Bouvier's Law Dictionary*, Third Revision, West Publishing Co., St. Paul, Minnesota, 1914, p. 2313.

than exercise reasonable care and skill in making inquiries in investigations. He is not an insurer; he does not guarantee that the books do correctly show the true position of the company's affairs; . . . what is reasonable care in any particular case must depend upon the circumstances of that case. Where there is nothing to excite suspicion very little inquiry will be reasonably sufficient, and in practice I believe businessmen select a few cases at haphazard, see that they are right, and assume that others like them are correct also. Where suspicion is aroused more care is obviously necessary; but still, an auditor is not bound to exercise more than reasonable care and skill even in the case of suspicion.[15]

The courts have indicated that a failure to exercise due care existed when:

1. Certain receivables were not verified.[16]
2. Work was not performed in a timely manner.[17]
3. Reliance was placed on director's unsupported statements, and such reliance was not stated in the report.[18]
4. Books of original entry were not investigated thoroughly for the purpose of discovering unrecorded liabilities.[19]

STANDARDS RELATING TO FIELD WORK

Planning and Supervision

The first standard relating to field work states that "The work is to be adequately planned and assistants, if any, are to be properly supervised."[20] The law and the public accounting profession are in agreement as to the need for planning and supervision of audit work, but neither has indicated what planning work is essential. In order to serve practitioners as guides to the basic areas in which planning is required and the extent to which plans should be made, the profession should improve its standards by specifying the nature and extent of the planning which must be done.

Planning includes assigning subordinates to the job, distributing work loads over the time available for making the audit, ascertaining what interim work can be done, organizing the work so that it will be done in a timely and orderly manner and making plans for inventory observation. The supervision of audit work involves primarily giving instructions to subordinates and reviewing their work. It has been definitely established in the law that a principal is responsible for the acts of his subordinates.[21] This would apply whether the subordinate is an employee (as is the case with work delegated to other firms), and whether the employee has the express or implied authority to perform or omit such actions.

The decision of a manager of a public accounting office in which he acquiesced to a management request that no physical inventory of work in process be taken was held to be improper by the SEC.[22] The accountants in this situation obviously failed to follow the standard with respect to the planning of the audit.

An extreme case with respect to the lack of supervision was decided in England in 1932. This auditor entrusted all of his audit work to a young assistant and did not supervise his work in any way. Errors made in this audit included the understatement of liabilities, overvaluation of work in process, and the omission of a provision for bad debts. The auditor was held liable in this case for damages resulting from his failure to supervise properly the assistant's work.[23]

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[15] *In re London and General Bank*, (1895) 2 Ch. 673 (C.A.).
[16] *Ultramares Corp. v. Touche*, 255 N.Y. 170, 174 N. E. 441 (1931).
[17] *L. B. Laboratories, Inc. v. Mitchell*, 39 Cal. 2d 56, 244 P. 2d 385 (1952).
[18] *In re Liverpool & Wigan Supply Ass'n., Lim.* 27 Acct. L. R. 4 (Bankr. Ct. (1907).
[19] *Duro Sportswear v. Cogan*, 131 N. Y. L. J. 7 (N. Y. Sup. Ct. April 29, 1954).
[20] *Generally Accepted Auditing Standards*, op. cit., p. 13.
[21] *Ultramares Corp. v. Touche*, 255 N. Y. 170, 174, N. E. 441 (1931).
[22] *Barrow, Wade, Guthrie & Co.*, SEC Accounting Series Release No. 67 (April 18, 1949).
[23] *In re Westminster Road Construction & Engineering Co.*, 76 Acct. L. R. 38 (Ch. 1932).

The SEC has commented on the nature of the review which must be made of subordinates' work:

> We think it is self-evident that the review upon which an accounting firm assumes responsibility for work done by subordinates must be more than a series of perfunctory questions as to the performance of particular items in an audit program. Nor should explanations of unusual items be accepted by a reviewer without support in detail from the working papers. As a matter of principle, a review should, it seems to us, be designed with two objectives in mind: First, to insure the integration of the original work papers with the financial statements; second, a searching analysis of the ultimate facts developed in the course of the actual audit.[24]

The need for good partner review was highlighted in the McKesson & Robbins[25] case. There it was indicated that the partner who reviewed the work papers did not make the searching review which the engagement required, partly because he was not sufficiently familiar with the business practices in the industry and not sufficiently concerned with the basic problems of internal check and control. In the *Ultramares* case[26] it was noted that audit review failed to reveal the existence of trouble areas, even though at least one unanswered question left in the papers should have suggested further investigation.

The organization of a public accounting firm is important with respect to assuring adequate supervision of each audit. Since the partnership is responsible for each report rendered, it is important that some partner who is sufficiently familiar with the engagement should review the report before it is delivered to the proper parties. The SEC indicated improper organization existed in a case in which a partnership functioned without centralized supervision of its field offices and did not exercise even local control over one office, even though that local office did not have a resident partner.[27]

Reviewing Internal Control

The second field work standard states:

> There is to be a proper study and evaluation of the existing internal control as a basis for reliance thereon and for the determination of the resultant extent of the tests to which auditing procedures are to be restricted.[28]

The public accountant must review internal control since his decisions as to its effectiveness will bear directly on the selection, extent, and timing of the auditing procedures to be employed. The review should encompass accounting controls primarily and other controls only insofar as is necessary to give the auditor an indication as to the reliance he can place on the records to be examined.

The law supports the internal control review standard. It appears in the law that the public accountant has performed his duty with respect to reviewing internal control when he has reviewed the system, based his use of audit procedures on his findings, and reported to his client the weaknesses in the system.

In an English case an auditor was charged with the failure to uncover and report a defalcation. The system of internal control was weak with respect to short-term receivables and a salesman took advantage of the weakness and misappropriated some cash. The auditor discovered the weakness and called it to the company's attention before the defalcation began, but the company made no change in its system. The court indicated the auditor's duty did not extend beyond discovering and reporting the weakness to the client; no duty existed to tell the firm how to carry on its business.[29] An American case decided in 1940 had similar facts in that the accountants had recommended

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[24] *Interstate Hosiery Mills, Inc.*, 4 SEC 706 (1939).
[25] *McKesson & Robbins, Inc.*, SEC Accounting Series Release No. 19, (Dec. 5, 1940).
[26] *Ultramares Corp. v. Touche*, 255 N. Y. 170 174, N. E. 441 (1931).
[27] *Barrow, Wade, Guthrie & Co.*, SEC Accounting Series Release No. 67 (April 18, 1949).
[28] *Generally Accepted Auditing Standards*, op. cit., p. 13.
[29] *In re S. P. Catterson & Sons, Ltd.*, 81 Acct. L. R. 62 (Ch. 1937).

changes, which were not adopted, in the accounting system in order to strengthen internal control. The embezzler here was the secretary-treasurer of the company. The accountants again were held not responsible as the court indicated that the shortages resulted solely and proximatey from the methods of the company in operating its business.[30]

An adequate system of internal control would tend to limit irregularities to those which involved collusion and those which were not large enough to warrant the cost of preventive control. In the *McKesson & Robbins* case the SEC indicated that the review of the system of internal control was unsatisfactory, that accountants generally make this review in too casual a manner, and that the accountants can be expected to detect irregularities if they involve gross over-statements of assets and earnings even though collusion exists with respect to top management.[31]

Obtaining Evidence

The third field work standard states:

> Sufficient competent evidential matter is to be obtained through inspection, observation, inquiries and confirmations to afford a reasonable basis for an opinion regarding the financial statements under examination.[32]

In order to be considered sufficient, evidence must adequately support and explain the auditor's position with respect to each item reported and each area that should have been examined.

The necessity for adequate evidence to support opinions rendered and statements made is obvious and is accepted by the law. The profession needs to go further than the obvious in this area and indicate tests that would determine the adequacy of evidence obtained, and/or give indications of the quantity and quality of evidence needed in various types of situations. Such action by the profession would serve both practitioners and users of audited data by making known the minimum evidence which must be obtained before certified reports are issued.

The evidence needed and procedures used will vary according to the nature of the situation, suspicions that are aroused, terms of the audit contract, and the accepted practices of the profession. Much more evidence is needed for a detailed audit than for the usual opinion audit. One court indicated that certain facts, including the failure to compare all cancelled checks with supporting data, were sufficient to indicate negligence in the conduct of a detailed audit.[33]

In the usual opinion audit wherein testing and sampling methods are used, the quality of the items selected becomes extremely important. The use of testing and sampling seems to be accepted by the law as appropriate, assuming that the test has been made properly, except in the case of a detailed audit or in a situation in which a specific object is agreed upon by the parties.

The need for sufficient data was pointed out by the Court of Appeals in New York as follows:

> We conclude, to sum up the situation, that in certifying to the correspondence between balance sheet and accounts the defendants made a statement as true to their own knowledge, when they had, as a jury might find, no knowledge on the subject. If that is so, they may also be found to have acted without information leading to a sincere or genuine belief when they certified to an opinion that the balance sheet faithfully reflected the condition of the business.[34]

The SEC indicated in a 1939 release:

> It is clearly his duty to all concerned, himself

[30] *Bolin, Quinn, & Ivy v. Lewis Supply Co.*, Chancery Court, Shelby County, Tenn., No. 43687 R. D. (May 27, 1940).

[31] *McKesson & Robbins, Inc.*, SEC Accounting Series Release No. 19 (Dec. 5, 1940).

[32] *Generally Accepted Auditing Standards*, op. cit., p. 14.

[33] *Dantzler Lumber and Export Co. v. Columbia Cas. Co.*, 115 Fla. 541, 156 So. 116 (1934).

[34] *Ultramares Corp. v. Touche*, 255 N. Y. 170, 174 N. E. 441 (1931).

included, to satisfy his own mind that the representations of his assistants are sound and reasonable, and that they are based on sufficiently extensive investigation and inquiry.[35]

In 1944 the SEC permanently suspended an accountant from practicing before them because he had made no audit of a registrant's affairs and had not examined its books. As a result he had failed to obtain sufficient competent data which would enable him to express an opinion with respect to the client's representations.[36]

Procedural Requirements

Only two procedures have been adopted by the profession as standards, though some others are considered as requirements by many members of the profession. The two, which are required in the performance of each audit engagement where they are practicable and reasonable, were first adopted by the 1939 annual meeting of the American Institute of Certified Public Accountants and were reaffirmed in 1951 in *Codification of Statements on Auditing Procedure.*[37] They require the independent public accountant to observe the taking of physical inventories and to confirm receivables when such asset represents a significant proportion of the current assets or of the total assets of the client.

The SEC accepts these two procedural requirements as standards. The courts appear to have accepted the confirmation requirement but not to have considered the inventory observation requirement. There seems little doubt that the law would support this professional requirement if it were the subject of litigation. The profession should consider the adoption of minimum procedural requirements in other areas as part of its effort to raise the level of professional practice.

The SEC indicated in a 1949 release that where public accountants did not insist on the taking of a physical inventory of work in process and the observing of it, that they failed to acquire sufficient information which would enable them to express an opinion with respect to such inventory.[38]

Confirmation of receivables was a major factor in litigation at the appelate level in Illinois in 1956. A client's bookkeeper requested the auditors to omit confirmation of certain accounts receivable. The bookkeeper had used these accounts to cover a defalcation. The court indicated that the failure of the accountants to confirm them constituted negligence and carelessness in the conduct of the audit.[39]

STANDARDS RELATING TO REPORTING

Accounting Principles

The first standard relating to reporting states "The report shall state whether the financial statements are presented in accordance with generally accepted principles of accounting."[40] Accountants do not have an agreed upon list of principles but rely on generally accepted practice and authoritative pronouncements. Accounting principles are important only to the extent that the items in question are material, either individually or collectively. There are a good many differences in the application of principles but so long as the application fairly portrays the situation the standard is satisfied.

The courts have not considered accounting principles as such. When the question of a specific practice has arisen, the court has often attempted to ascertain the prin-

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[35] *Interstate Hosiery Mills, Inc.*, 4 SEC 706 (1939).
[36] *C. Cecil Bryant*, 15 SEC 400 (1944).
[37] *Codification of Statements on Auditing Procedure*, American Institute of Certified Public Accountants, New York 16, New York, 1951, pp. 22 & 25.
[38] *Barrow, Wade, Guthrie & Co.*, SEC Accounting Series Release No. 67 (April 18, 1949).
[39] *Cereal By-Products Co. v. Hall*, 8 Ill. App. 2d 331 (1956).
[40] *Generally Accepted Auditing Standards*, op. cit., p. 14.

ciple by reasoning, by considering the testimony of expert witnesses and by inferring what treatment would be just in the situation. As a means of reducing uncertainty as to the nature of accounting principles and their application, the profession should consider working towards a formulation of such principles. The SEC has taken a major interest in formulating generally accepted accounting principles and ascertaining that they have been followed in practice before it. In one case the SEC indicated that the balance sheet was not prepared in accordance with accepted accounting practice when (1) it omitted certain contingent liabilities, (2) certain items were called "property" even though only options to acquire property existed, and (3) the value of certain mining claims in gold and silver rights were valued at the par value of shares of stock issued for them when other shares of such stock were sold at the same time at substantially lesser prices to outsiders.[41]

Consistency

The second reporting standard states:

> The report shall state whether such principles have been consistently observed in the current period in relation to the preceding period.[42]

Consistency has been defined as having agreement with itself or something else, as being compatible and not contradictory. In accountancy, consistency is a term used in connection with the application of generally accepted principles and practices. In order to be consistent, similar material items should be handled uniformly within a given period and from period to period. Change from one accepted method of accounting to another may be desirable but disclosure of such change and its net effects is necessary because the handling has not been consistent.

There is little material available in the law as to the consistency standard, but the law should accept this standard in order to help avoid one possible source of misunderstanding by users of financial statements.

The SEC's interest in consistency is reflected in its requirement that in practice before it changes in accounting principles or practices or in their application are to be shown in footnotes, together with the data as to the effect on net income for each period covered by the statements.[43]

In a case concerning writing off deferred charges, the SEC indicated that a change from annual amortization to lump sum write-off was not consistent.[44]

Disclosure

The third standard on reporting states:

> Informative disclosures in the financial statements are to be regarded as reasonably adequate unless otherwise stated in the report.[45]

The standard of disclosure is concerned with the scope of the auditor's examination and the form and content of the financial statements, including footnotes. All relevant facts which might serve as a basis for action by a user of the accountant's report should be revealed. The interpretation which lay persons as well as skilled accountants and investment analysts might place on statements must be considered before each report is issued in order to avoid any misunderstanding on the part of the user of the statement. The law and the profession are in agreement as to the necessity for disclosure of all relevant data in the auditor's report and the accompanying financial statements.

There are English cases which indicate

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[41] *Poulin Mining Co.*, 8 SEC 116 (1940).

[42] *Generally Accepted Auditing Standards*, op. cit., p. 14.

[43] *Regulation S-X*, Rule 3-07, United States Securities and Exchange Commission, Washington 25, 1955, p. 6.

[44] *Metropolitan Personal Loan Corp.*, 7 SEC 234 (1940).

[45] *Generally Accepted Auditing Standards*, op. cit., p. 14.

that disclosure of overvaluation of assets must be made,[46] but that if an accounting treatment is conservative, even ultra-conservative, disclosure is not required.[47] English courts have also indicated the necessity of disclosing the sources of earnings, particularly if special funds are being used in order to offset operating losses.[48] Even though there is no direct American equivalent to the English cases just cited, it would appear that U. S. courts under common law or the Securities Acts would find that an auditor had failed in his duties if he did not fully disclose all relevant data in similar situations.

In the United States, full disclosure with respect to certain financial statements certified by public accountants has been required by statute since 1933. The *Securities Act of 1933*[49] required full disclosure for statements filed in accordance with its registration requirements. Section 77h(d) of that act provided penalties if "the registration statement contains any untrue statement of a material fact or omits to state any material fact required to be stated therein or necessary to make the statements therein not misleading." In the *Securities Exchange Act of 1934*[50] full disclosure is required by Section 78r(a) which subjects to penalty those persons involved in filing reports that contain any statement "which statement was at the time and in the light of circumstances under which it was made false or misleading with respect to any material fact."

From time to time the SEC, which administers the Securities Acts, has seen fit to issue "stop orders" on the sales of securities when the financial statements filed pursuant to the requirements of one of the Acts failed to disclose fully all relevant facts relating to the company filing its statements.

In 1957 the SEC held that full disclosure was not achieved and the statements were false and misleading when a note receivable given by an underwriter to cover the improper diversion of proceeds from the sale of securities was included as a current asset at its full face value even though the understanding existed that the note would not have to be paid.[51]

Disclosure is also required with respect to such items as changes in accounting methods,[52] material restrictions on surplus available for dividends,[53] and significant post balance sheet events.[54]

Opinion

The fourth reporting standard states:

> The report shall either contain an expression of an opinion regarding the financial statements, taken as a whole, or an assertion to the effect that an opinion cannot be expressed. When an over-all opinion cannot be expressed, the reasons therefor should be stated. In all cases where an auditor's name is associated with financial statements, the report should contain a clearcut indication of the character of the auditor's examination, if any, and the degree of responsibility he is taking.[55]

This standard requires the accountant to state his opinion, whether it be positive or negative, and, if it is negative to indicate the reasons therefor. The necessity for positive reporting of the auditor's findings is recognized by the law, though it is not stated as precisely as the professional standard. There is a two-fold effect of this statement. First, it prohibits the accountant from using his name in any way that

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[46] *In re London and General Bank*, (1895) 2 Ch. 673 (C.A.).

[47] *Newton v. Birmingham Small Arms Co.*, 2 Ch. D. 378 (1906).

[48] *Rex v. Kylsant & Morland*, 85 The Accountant 109 (Cent. Crim. Ct. 1931).

[49] 48 Stat. 82 (1933), 15 U.S.C. 77 (a)–(aa) (1952).

[50] 48 Stat. 881 (1934), 15 U.S.C. 78 (a)–(jj) (1952).

[51] *National Boston Montana Mines Corp.*, 2 SEC 226 (1937).

[52] *Accountants' Certificates*, SEC Accounting Series Release No. 32 (March 10, 1942).

[53] *Disclosure of Limitations on Availability of Surplus for Dividend Purposes*, SEC Accounting Series Release No. 35, (Sept. 3, 1942).

[54] *Portrero Sugar Co.*, 5 SEC 982 (1939).

[55] *Generally Accepted Auditing Standards*, op. cit., p. 14.

might place responsibility upon him which he did not intend to assume. Secondly, it tends to strengthen the public's right to hold the accountant responsible for any report or statement to which his name is attached.

One of the earliest cases involving an inadequate opinion was decided by the English Court of Appeal.[56] The auditor was found guilty of misfeasance when he, though dissatisfied with the accounts of the company, did not plainly draw attention to the grounds for his dissatisfaction in his audit report. The auditor's report to the Board of Directors called attention to the deficiencies, but his report to the shareholders did not indicate any specific dissatisfaction with the accounts of the company or any doubts about the fairness of the statements.

The SEC has commented on the audit certificate and the opinion which is contained therein. In the *McKesson & Robbins* case,[57] the SEC indicated that a statement as to whether or not the scope of the audit was adequate for the purpose of expressing an independent opinion with respect to the financial statements should be included in the certificate. Any omissions of generally accepted procedures should be stated and consideration given to qualifying the report. The SEC released a statement on April 10, 1951 which indicated that disclaimers of responsibility have questionable standing before it.[58]

SUMMARY

Current auditing standards are not in conflict with the law and are to some extent supported by the law. The personal standards appear to be based on legal concepts recognized by statutory and case law. The field work standards are supported by SEC opinions and by legal decisions with respect to the need for adequate evidence. Reporting standards are in agreement with SEC decisions and rules. The doctrine of full disclosure finds support in case law and the *Securities Acts* also.

The public accounting profession needs to evaluate existing auditing standards and promulgate revisions which will best serve the interests of the profession and the public which benefits from the services of the profession. Legal concepts should be considered by the profession in making revisions in order to avoid conflict with the law, but should be taken only as indications of minimum performance. In order to serve the public accounting profession better as guides for performing tasks and to serve the law better as criteria for judging the adequacy of the work done by public accountants, standards which are more specific and which go beyond the general statements used today are desirable.

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[56] *In re London and General Bank*, (1895) 2 Ch. 673 (C.A.).

[57] *McKesson & Robbins, Inc.*, SEC Accounting Series Release No. 19 (Dec. 5, 1940).

[58] *Securities Act of 1933* Release No. 3441, 1951, pp. 1 and 2.

SPIN-OFFS VS. DIVIDENDS IN KIND

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MUCH attention has recently been given by the public press to the developments in the recent Government anti-trust suit against the Du Pont Company and General Motors Corporation. The United States Supreme Court's mandate in that case, which involves Du Pont in the difficulties of divesting itself of its entire interest in General Motors stock, highlights a distinction in corporate concepts which should be of considerable interest to the accounting profession—the difference between spin-offs and dividends in kind.

While students of accounting are generally made quite aware of another interesting distinction in the field of corporate distributions, that of the stock dividend versus the stock split, little if any attention is given in accounting literature to their "second cousins," the subjects of this paper. The accounting for the spin-off and the dividend in kind does not, perhaps, in general present problems which are especially difficult. Too little, nevertheless, is available about these devices. In view of their growing importance in the field of corporate finance, it is believed that the nature of the spin-off and dividend in kind, the important distinction between them, and the accounting for them, are matters with which practitioners, teachers, and students in our profession should be familiar.

In the stock dividend and the stock-split (the latter, as will be brought out later, often confusingly also referred to as a "split-up"), one is dealing with the problems of increasing the number of outstanding shares of a corporation's own stock. The difference between these methods is indeed largely an accounting matter. The stock dividend involves a transfer from retained income to permanent capital, either capital stock or paid-in surplus. The stock-split, on the other hand, generally increases the outstanding shares by a decrease in the par, stated, or declared value per share, usually with no change in the corporate accounts.

The actions which are the subjects of this paper, however, are distributions by a corporation to its stockholders of stock in another corporation, usually a subsidiary. The two major methods of accomplishing this distribution are by means of property dividends in the subsidiary's stock, referred to as dividends in kind, and by the type of action which often is referred to as a divisive reorganization, although under present regulations this name is no longer necessarily appropriate. This latter method actually comprises three possibilities, the spin-off, the split-off and the split-up.

The feature which distinguishes these three corporate devices from each other is not particularly an accounting one, the bookkeeping for all of them being essentially similar. Rather, it involves important differences brought about by income tax regulations. It is indeed this tax distinction which is behind much of the difficulties connected with the Du Pont-General Motors case.

The term "dividend in kind" actually refers to any distribution by a corporation, out of earnings or retained income, of an asset other than money. For the purposes of this paper, however, which are to point up the differences between such dividends and the so-called divisive reorganizations,

discussion of dividends in kind will be limited solely to those distributions by a corporation of the shares which it owns in the stock of another corporation.

Because of the similarity in names, these property dividends in stock are sometimes confused with stock dividends. There are, however, two major ways in which the two differ. In the first place, of course, while both represent deductions from earned surplus, the stock dividend does not diminish the corporation's assets, whereas the dividend in kind does, namely, by reducing the corporation's ownership in the stock of the subsidiary company. Furthermore, whereas a stock dividend usually does not constitute taxable income to the recipient, the distribution in kind by a corporation of stock of another company, since it represents earnings or surplus, is taxable to the recipient as dividend income.[1]

The income tax treatment of such property dividends in stock, incidentally, presents a seeming paradox which is interesting from an accounting standpoint. When a corporation distributes property as a dividend in kind, its surplus is decreased by an amount equal to the cost of the property. If the property is carried, as securities of subsidiaries often are, at an adjusted basis which is different from the cost, surplus should then be charged with an amount equal to this adjusted basis, rather than the cost. In both cases, this debit to retained income is made without regard to the market value of the stock distributed.[2] Courts of law have uniformly held that a stockholder cannot receive a dividend greater in dollar amount than the corporation's earnings and profits determined without regard to the distribution.[3] Furthermore, because a corporation's earnings and profits are not increased by distribution in kind of appreciated property, the United States Supreme Court has declared that the corporation does not itself realize taxable income through this distribution by it of appreciated property as a dividend.[4] Once the dividend gets in the hands of an individual stockholder, however, it is income to him at its fair market value at the time he receives it, and this individual stockholder receiving it must include the dividend in kind in his gross income for tax purposes at its fair market value at the time of such receipt.[5] While this may indeed at first seem anomalous, it is certainly in keeping with the entity theory in accounting.

Sometimes the distinction between the use of cost or fair market value to the distributing corporation may depend on the wording of the dividend declaration. If the dividend is declared in dollars, but then in the payment of this obligation securities or other property are distributed, the difference between the cost and fair market value of these assets does represent a taxable gain or loss to the distributing corporation. It is only if the dividend resolution provides that the corporate property itself be distributed by way of a dividend that the adjusted cost basis is used and no taxable gain or loss is incurred by the distributing corporation.[6]

There have been many instances of dividends in kind of the stock of other companies in recent years. Most notable perhaps are those of Standard Oil of Indiana, which for several years has given to its stockholders shares of Standard Oil of New Jersey as a dividend, and New York Central Railroad, which in 1956 gave its

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[1] See citations on page 281 in *Commissioner vs. Wakefield*, 139 Fed. (2) 280 (1943).

[2] *Commissioner vs. Hirshon Trust*, 213 Fed. (2) 523 (1954); *R. D. Merrill Co.*, 4 T.C. 955 (1945); See also Raum, L., "Dividends in Kind, Their Tax Aspects," 63 *Harvard Law Review* 593 (1950).

[3] *Commissioner vs. Timken*, 141 Fed. (2) 625 (1944).

[4] *General Utilities Co. vs. Helvering*, 296 U. S. 200 (1935).

[5] *Commissioner vs. Wakefield*, 139 Fed. (2) 280 (1943); *Commissioner vs. Hirshon Trust*, 213 Fed. (2) 523 (1954); *Commissioner vs. Godley's Estate*, 213 Fed. (2) 529 (1954).

[6] Newlove, G. H., Smith, C. A. and White, J. A., *Intermediate Accounting*, Boston: D. C. Health & Co., 1948, p. 332.

stockholders one share of U. S. Freight for each 21 shares of Central stock. A large part of the difficulties in the Du Pont-General Motors case were centered around the Internal Revenue Bureau's insistence that distribution to its stockholders of the Du Pont Company's holdings of its General Motors stock would be taxable as income to those Du Pont shareholders.

It is in the matter of income tax to the recipient that the dividend in kind differs from the spin-off, split-off, and split-up, the latter often referred to as "Section 355 actions," since it is in that section of the Internal Revenue Code of 1954 that these three methods of distribution are covered. As was mentioned, dividends in kind of another company's stock are taxed to the individual recipient as income. Distributions of the stock of another corporation by one of the three methods authorized in Section 355 are, on the other hand, completely tax free, provided that the rules of the section are carefully followed and its requirements fully met. Let us define and illustrate each of these procedures[7] before looking into these statutory requisites.

A "spin-off" takes place when the stock or securities of a corporation controlled by a transferor corporation are distributed to the shareholders of such parent company without a surrender by the shareholders of stock or securities in that distributing corporation. Thus when in 1954 United Aircraft Corporation distributed to its shareholders all its holdings in the stock of its subsidiary, Chance Vought Aircraft Incorporated, this was a spin-off.

The spin-off may also be of shares in a new company formed just for that purpose, provided it meets the regulation of Section 355 requiring a multiple business, to be discussed later. The example is given of Corporation B, a bank, which owns an eleven-story office building, the ground floor of which it occupies in the conduct of its banking business and the remaining ten floors of which it rents to various tenants. If the bank forms a new corporation, to which it transfers the building, and distributes all of the stock of the new corporation to the bank's shareholders, it has then carried out a spin-off.

A "split-off" is another type of corporate separation authorized in Section 355. Under this method, the parent corporation distributes to its shareholders stock in a corporation which it controls, much the same as in a spin-off, except that in this situation the shareholders surrender a part of their stock in the parent corporation for the stock in the former subsidiary corporation. Thus, for example, if in the bank illustration mentioned above, the bank's shareholders are required to surrender 30% of their stock in the bank and receive pro-rata distributions of all the stock in the new real-estate corporation, a split-off will take place.

In a "split-up" under Section 355, the shareholders in the distributing corporation surrender all their shares in this company and in return receive new shares in both the distributing corporation and the subsidiary company which it controlled immediately before the distribution. Thus, in the bank illustration, let us assume that the bank, Corporation B, transfers its banking business to new Corporation C and transfers the building to new Corporation D, in exchange for all the stock of C and D. It then transfers the C and D stock to the shareholders of B in exchange for all of the stock of B, and the B company is then liquidated. This is a split-up.

It can thus be seen how very different this split-up under Section 355 is from the stock-split, or share split-up. The split-up mentioned in the code is a form of corporate separation, more or less similar to the process in biology of binary fission. The stock-split, on the other hand, which is often also referred to as a "split-up," is

[7] See *Federal Tax Guide*, Vol. I, 1959, N. Y.: Commerce Clearing House, Inc., Para. 5520 *et seq.*

merely an increase in the outstanding stock of a corporation with no increase in the capital accounts themselves.

In each of the situations under Section 355, the spin-off, split-off, and split-up, no gain is recognized in the distribution or exchange of shares so the stockholders receive their new stock free of any income tax. If, however, the rules and requirements of Section 355, to be discussed shortly, are not carefully adhered to, the distribution is then considered a dividend in kind and taxable as income to the recipient.

Let us first look briefly into the history of these corporate divisions.[8] The tax free split-up was permitted as far back as 1918. This involves the division of the assets of a single corporation by transferring those assets to two new corporations, the stock of which is distributed in liquidation of the original company. The Revenue Act of 1924 added the split-off and spin-off to the permissible tax free actions. In 1934, the tax free spin-off (the transfer of part of the assets of an original corporation to a new corporation, the stock of which is given to the stockholders of the original company without requiring surrender of any stock of the latter), was eliminated from the statute, although the tax free split-off and split-up were still permitted under the 1939 code as reorganizations. It is this latter limitation that doubtless gave rise to the frequently used term, "divisive reorganizations," to describe actions under the present Section 355.

A 1951 amendment to the 1939 code brought the spin-off back into the area of tax free reorganizations, but set up five limitations. First of these was that the stock of an existing subsidiary could not be distributed. Second, the spin-off had to be pro-rata among all the shareholders. Third, the stock of the new corporation being distributed could not be a preferred issue. Fourth, the old and new corporations must each have intended to continue as an active business. Finally, fifth, the spin-off distribution could not be used principally as a device for the distribution of profit in an attempt to avoid taxes.

The new Section 355 of the 1954 code pre-empted the entire field of tax free corporate separations and eliminated or modified all but the fifth of the 1951 limitations. More important, however, was the fact that it authorized tax free corporate divisions even though they were not in conjunction with a reorganization. Thus, for the first time, the stock of an existing controlled subsidiary could be distributed tax free to stockholders of the parent company.[9] The name "divisive reorganization," therefore, no longer necessarily describes the tax free corporate separation.

The present Section 355 sets up four rules or requirements which must be met for any spin-off to qualify under the code. First of these is that requiring a multiple business. This means that in order for the corporate separation to be tax free, both the parent company and the subsidiary must have been actively engaged in a trade or business, and must continue to be so engaged after the distribution. Furthermore, the trade or business must have been conducted for at least five years prior to the spin-off, although it is not necessary that the business must have been conducted by the subsidiary all that time. Where the parent company transfers a business to a subsidiary corporation, the period during which the parent corporation operated the business can count toward the five year period.[10]

The second rule in the present code is that of 80% control. In order for the distribution not to be taxable to the share-

[8] Dean, S. T., "Spin-Offs, General Rules," *N. Y. U. Fifteenth Institute on Federal Taxation*, N. Y.: M. Bender & Co., 1957, p. 570.
[9] *Ibid.*, p. 573.
[10] Kahn, E. L., "Parent Subsidiary Corporations," *N. Y. U. Sixteenth Institute on Federal Taxation*, N. Y.: M. Bender & Co., 1958, p. 328.

holders involved, the distributing corporation must give out at least 80% of the outstanding stock of the controlled corporation. It is this 80% rule that stopped a Du Pont distribution of General Motors stock from being a tax free spin-off under Section 355, since the former only owned 23% of the General Motors stock.

The third rule requires that in a tax free separation there must be a complete distribution of the stock. That is, the parent corporation must distribute all the stock of the subsidiary that it owns, even though, as just mentioned, this may amount to as little as 80% of the total stock of the subsidiary company. It was mainly on the basis of this provision that Commonwealth Edison Company, which had originally planned to spin off its subsidiary, Northern Illinois Gas Company, in installments, and had actually made one previous distribution of the latter's stock, completed the separation in 1954 by distributing all the remaining gas company shares it owned in one final transfer.

The final rule has been referred to as the "Fourth Commandment" of the section, because it says in effect "Thou shall not have a tax motive."[11] This regulation continues the fifth limitation of the 1951 amendment to the 1939 code, in that the spin-off or other such distribution cannot be used principally as a device for the distribution of profits. Rather, there must be a purity of tax motive, in that the action is being undertaken for reasons of pure business expedience and not just to save taxes.

The present code not only does not require the distribution to be part of a plan of reorganization, as formerly, but also does not insist that it necessarily be distributed pro-rata among all stockholders. There is in addition no longer any prohibition against the distribution of preferred stock.

As previously mentioned, the accounting entries for these Section 355 actions generally cause no great difficulty and are quite similar to the entry which records a dividend in kind. The net effect is to reduce the investment in the subsidiary at its adjusted cost and similarly to reduce the retained earnings account. Should this bring retained earnings down to too low a figure, some of the debit may be charged to any paid-in surplus, or the directors may even find it necessary, with stockholder approval, to reduce the capital stock account by a reduction in the par, stated, or declared value.

Although this creates no problem for the existing subsidiary which is separated by a spin-off or split-off from its parent, the question does arise in those separations wherein a new corporation is formed as to the initial setting up of its accounts. Under the entity theory in accounting, it would seem that assets should be taken up at their fair value at the time the new company acquires them, rather than at their original cost to the parent corporation. Prior carrying values have, however, been used in several important spin-offs, probably for the reason that the tax basis in any event is this original cost.

Chance Vought Aircraft Incorporated, for instance, took up on its accounts on January 1, 1954, working capital items at the $12,500,000 book value figure at which United Aircraft Corporation had previously carried them. It also took up fixed assets at a United Aircraft book figure of approximately eight million dollars and furthermore started out with its parent's accumulated depreciation figure of about three and a half million dollars. Northern Illinois Gas Company likewise showed its utility plant at original cost to its parent less considerable accumulated depreciation in the first year of its separation from Commonwealth Edison Company.

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[11] Dean, S. T., *op. cit.*, p. 585.

Both of the above mentioned new companies, however, followed what is generally considered to be the preferred procedure by beginning with no retained earnings balance at all. Each corporation waited until the end of its first year of operations, when it had earnings of its own to show any balance in that account. Both companies began operations with considerable paid-in surplus accounts.

In the separation of Firstamerica Corporation from Transamerica Corporation in 1958, the latter allocated over fifty million dollars of its earned surplus to the new company, which Firstamerica took up on its books as retained income at the start of its business. This was not actually a Section 355 separation, however, since it was required and authorized by the Bank Holding Company Act of 1956 and was considered to be more in the nature of a reorganization of the Transamerica Corporation. It is interesting to note, incidentally, that Transamerica transferred to Firstamerica its entire paid-in surplus, which, together with the allocation of part of its earned surplus, made it unnecessary to make any adjustment of the capital stock account of Transamerica upon the separation.

In order to illustrate the accounting and corporation finance differences among the various types of corporate transactions described in this paper, a balance sheet for a fictitious company will be presented, to be followed by a series of pro-forma balance sheet prepared as if each of the various distribution devices had been employed. The figures are of course artificial and over-simplified, but it is believed they will be useful in making the comparison among the various methods more understandable.

Let us assume that each of the situations starts with the same basic balance sheet, before the specific transaction to be illustrated takes place, which appears as follows:

ANJOU CORP.
BASIC BALANCE SHEET

Cash and Sundry Assets	$ 6,000,000	Liabilities	$ 2,000,000
Stock of Subsidiary, Bijou Corp. (Cost and Par Value per share $100)	3,000,000	Capital Stock (Par Value $100)	4,000,000
Real Estate (Cando Building)	1,000,000	Retained Income	4,000,000
	$10,000,000		$10,000,000

Anjou Corp. therefore has 40,000 shares of capital stock with a par value of $100 and a book value of $200 per share. A stockholder, X, who owns 10 shares of Anjou stock would thus have an investment with a total book value of $2,000.

Stock Dividend: If the Anjou Corp. declares a 50% stock dividend, its balance sheet would then appear as tabulated below.

Anjou Corp. now has 60,000 shares of stock outstanding, each with a par value of $100 but a book value now of $133⅓ per share. Stockholder X now owns 15 shares, although his investment still has a total value of $2,000.

ANJOU CORP.
BALANCE SHEET
After 50% Stock Dividend

Cash and Sundry Assets	$ 6,000,000	Liabilities	$ 2,000,000
Stock of Subsidiary, Bijou Corp.	3,000,000	Capital Stock (Par Value $100)	6,000,000
Real Estate (Cando Building)	1,000,000	Retained Income	2,000,000
	$10,000,000		$10,000,000

Stock Split: If, instead of issuing a dividend, the Anjou Corp. split its stock two for one, its balance sheet would appear as follows (starting from the above basic balance sheet, and assuming the 50% stock dividend in the previous illustration has not taken place):

ANJOU CORP.
BALANCE SHEET
After two for one Stock Split

Cash and Sundry Assets	$ 6,000,000	Liabilities	$ 2,000,000
Stock of Subsidiary, Bijou Corp.	3,000,000	Capital Stock (Par Value $50)	4,000,000
Real Estate (Cando Building)	1,000,000	Retained Income	4,000,000
	$10,000,000		$10,000,000

Under this arrangement, Anjou Corp. would have 80,000 shares of stock outstanding with a par value of $50 and a book value of $100 per share. Stockholder X would own 20 shares of stock, but the total value of his investment would still be $2,000.

Property Dividend in Stock (Dividend in Kind): Let us assume instead of a dividend or stock split, the Anjou Corp. directors declare a property dividend of one share of Bijou Corp. stock for each ten shares of Anjou Corp. owned (and the Bijou stock is valued at its cost and par value of $100 per share); the balance sheet would in this case be changed from the above basic balance sheet to appear as follows:

ANJOU CORP.
BALANCE SHEET
After Dividend in Kind of one share of Bijou for each ten shares of Anjou stock

Cash and Sundry Assets	$6,000,000	Liabilities	$2,000,000
Stock of Subsidiary, Bijou Corp.	2,600,000	Capital Stock (Par Value $100)	4,000,000
Real Estate (Cando Building)	1,000,000	Retained Income	3,600,000
	$9,600,000		$9,600,000

Anjou Corp. would have 40,000 shares of stock outstanding with a par value of $100 and a book value of $190 per share. Stockholder X would own 10 shares of Anjou stock with a total book value of $1,900, and one share of Bijou stock with a book value of $100, so that the book value of his total investment would again be $2,000. This is the only one of these various transactions illustrated in which X would be required to pay any income tax because of the distribution.

Spin-off: In this illustration, the Anjou Corp., starting with the basic balance sheet, spins-off all of its Bijou stock, charging the distribution at $100 a Bijou share to retained income. It gives each Anjou stockholder three shares of Bijou stock (par value $100) for each four shares of Anjou held. The balance sheet of Anjou would then be the one given at the top of the next page.

Anjou Corp. would still have 40,000 shares of $100 par value stock out standing, but its book value would be $125 per share. Stockholder X would own 10 shares of Anjou with a total book value of $1,250 and 7½ shares of Bijou Corp. with a total book value of $750, so that the book value of his total investment is once again $2,000.

Split-Off: The Anjou Corp. forms a new Cando Corp. with capital stock of $100 par value and turns over the Cando Building to the latter company. It requires each Anjou stockholder to surrender 25% of his Anjou holdings and to receive one

ANJOU CORP.
BALANCE SHEET
After Spin-off of Bijou Stock

Cash and Sundry Assets	$6,000,000	Liabilities	$2,000,000
Real Estate (Cando Building)	1,000,000	Capital Stock (Par Value $100)	4,000,000
		Retained Income	1,000,000
	$7,000,000		$7,000,000

share of Cando stock for each full share of Anjou stock turned in. The balance sheet of Anjou Corp. would then be as follows:

ANJOU CORP.
BALANCE SHEET
After Split-off of Cando Corp.

Cash and Sundry Assets	$6,000,000	Liabilities	$2,000,000
Stock of Subsidiary, Bijou Corp.	3,000,000	Capital Stock (Par Value $100)	3,000,000
		Retained Income	4,000,000
	$9,000,000		$9,000,000

Anjou Corp. now has 30,000 shares of stock outstanding with a par value of $100 and a book value of $233\frac{1}{3}$ per share, since Anjou Corp. did not give up any other assets beside the building to the Cando Corp. Stockholder X now owns $7\frac{1}{2}$ shares of Anjou stock with a total book value of $1,750 and $2\frac{1}{2}$ shares of Cando stock with a total book value of $250. The book value of his total investment is still $2,000.

Split-Up: In this instance two new corporations, Cando Corp. and Dodo Corp. are formed, Cando to take over the building and Dodo to take over all other Anjou activities. Anjou Corp. turns over the Cando Building and $250,000 of cash and sundry assets to Cando Corp. and all the rest of its assets, except the Bijou stock, to Dodo Corp. Anjou stockholders surrender their stock and receive one new share of Cando stock (par value $100), 3 shares of Bijou stock (par value $100 each), and 3 new shares of Dodo stock (par value $100) for each four shares of Anjou stock turned in. Anjou Corp. then dissolves. The balance sheet of the new Dodo Corp. would appear as given below. The Dodo Corp. would have 30,000 shares of $100 par value stock outstanding, each share with a book value of $125 per share. Bijou stock would have a par and book value of $100 per share. Cando Corp. stock would have a par value of $100 per share and a book value of $125 per share. Stockholder X would now own $7\frac{1}{2}$ shares of Dodo Corp. stock with a total book value of $937.50, $7\frac{1}{2}$ shares of Bijou Corp. stock with a total book value of $750, and $2\frac{1}{2}$ shares of Cando Corp. stock with a total book value of $312.50, so that the book value of his total investment remains $2,000.

DODO CORP.
BALANCE SHEET
After split up of Anjou Corp. into Cando Corp. and Dodo Corp.

Cash and Sundry Assets	$5,570,000	Liabilities	$2,000,000
		Capital Stock (Par Value $100)	3,000,000
		Retained Income	750,000
	$5,750,000		$5,750,000

The spin-off and its sisters, the split-off and split-up, are relatively new devices with little established accounting doctrine to guide the student in his study of them. As the pendulum of industrial organization has started to swing once again in the direction of decentralization, and as some of the myriad of corporate mergers possibly prove to be less satisfactory than was originally expected of them, corporate separations under Section 355 might become even more popular and thus a more important subject for study in the fields of corporate finance and accounting than at present. It is therefore hoped that this article will have initiated the reader into the intricacies of these methods of corporate division.

NEEDED: A GLOSSARY TO ACCOMPANY AUDIT REPORTS

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A STUDENT in an elementary accounting class was asked to record the transaction in which a donation had been made to the Junior League. He debited Advertising Expense. The instructor, puzzled, asked for an explanation and learned that in that student's home town the Junior League was an organization devoted to amateur baseball. The student had assumed that the contribution which the hypothetical concern had made would entitle it to have its name emblazoned on the uniform of one or more players. There had been a total failure of communication.

The problem of transmitting ideas clearly and accurately is so formidable and of such long standing that it is well-known to all. There are those who believe that its genuine solution would quickly lead to the end of wars. Its solution is a major aim of education.

Probably no group is more dependent for success upon solving this problem than the accounting profession. Few groups are more ambitious in setting an objective for solving their problems. The naively-ambitious, wholly commendable, desire for total communication is an ambition which is very far from being satisfied. The writer recalls a complaint from a Professor of Government concerning some of his research which made use of published financial reports of local governmental units. His experience had been as follows:

On one statement he had discovered an unfamiliar reserve, the nature of which he no longer recalls. First he consulted members of the accounting profession; they were unable to enlighten him. Next he consulted the governmental unit which had issued the statement, but no additional aid to understanding was forthcoming. The public authorities did explain, however, that the statement was largely the work of a public accountant who might be contacted by telephone. A telephone conversation, however, disclosed only that this person no longer knew what he had meant by the reserve terminology. It required, later, a search of his working paper files to make available the significance of that particular portion of the report.

Disconcerting as this incident may be, it is neither isolated nor very surprising. We all know that there have been cases before our courts where a decision has been based upon a clear misunderstanding by the presiding judge of the significance of financial reports. The word "surplus" has most often been involved, but there is considerable basis for misunderstanding among other accounting terminology. Furthermore, it is not only those outside the profession who experience a problem or contribute to the difficulty.

This writer had occasion to investigate this problem thoroughly and discovered an astonishing degree of variable usage for a great many of the most significant accounting terms.[1] Who would have supposed that there exist seven distinguishable definitions for assets, or that burden has been defined in five distinct ways and

[1] F. A. Singer, A Summary and Evaluation of Selected Terms of Variable Usage in Financial Accounting, unpublished dissertation, Indiana University (Bloomington, Indiana, 1955).

has no less than fifteen different synonyms? There are five meanings for cost, five for depreciation, seven for expense, three for net worth, and for profit, four. Revenue has five meanings, and earned surplus, besides being defined in three different ways, has at least a dozen alternative phrases. Surely these are very important accounting terms. More significantly, these definitions do not come from the man on the street; all of them were found in textbooks in accounting and the literature of the profession as represented by *The Journal of Accountancy*, *The Accounting Review*, and *The Bulletins of the National Association of Cost Accountants.*

If the situation is not as desperate as it sounds, still it is a matter of importance which the Institute has acknowledged to a degree by sponsoring the work of the Committee on Terminology. It is important and desirable to establish a uniform terminology, but it will take a long time and one must not hope for too much. The Committee has done much constructive work toward this long-term goal, and this writer relied often upon its work in making his own recommendations with regard to the terminology problem. (It has also been gratifying to find that more recent pronouncements of the Committee have closely paralleled those already formulated by the author.) It is really not extremely difficult to make consistent sense out of the important accounting terminology. However, it does seem very optimistic to hope, as the recommendation to substitute something else for "surplus" seems to imply, that one can make a technical terminology so clear and familiar that no reader can be mistaken about it. It seems unlikely that surplus was ever very much misunderstood by professional accountants or financial analysts. The common agreement as to the meaning of surplus among the professional group seems precisely the sort of thing for which it is important to strive.

But when so fundamental a term as "income" has been given nine distinctly different definitions by professionally competent people—as is the case—there is a more immediate problem. Net income (though we may consider it a redundancy) would, I believe, be recognized by all of us as an equivalent for net profit. It then seems unfortunate, but of small importance, that the uninitiated will expect that gross income and gross profit are also synonyms. It seems not at all daring to assert that this is not so, but there is one textbook by a respected writer which does equate them. It is this sort of difficulty which seems urgent. There seems little doubt that the professional people misunderstand each other on occasion, and that these occasions may not be so infrequent as we think or wish. The variability in usage which was earlier cited for a number of terms is only a small sample of the total confusion, and it cannot be doubted that there is considerable misunderstanding among competent persons. There are two important things about this. First, it seems unlikely that professional people are sufficiently aware of the magnitude of the difficulty; hence there is a lack of caution. Second, there is no recourse for the person who recognizes the difficulty. If there is no group among whom the intended communication of financial statements is assuredly accomplished then the layman's situation is hopeless. We cannot hope to write so that he cannot mistake it, but we should provide a readily accessible source of reliable explanation and interpretation. So far this is done very imperfectly. A precise and uniform terminology will permit the effective accomplishment of this rather necessary service. A technical terminology will very commonly require a personal explanation for the serious, but occasional, user of reports; and—when this can be done reliably—it is a service

which deserves far more emphasis than it has so far received. The precision of terminology, however, is not now present and more needs to be done now about increasing the certainty of reliable communication among professional people. Recognition of a difficulty involves recognition of a need. That need can be met in the present circumstances by attaching a glossary of specialized terminology[2] to every financial report which will be circulated to persons other than those who receive it direct from the professional person who prepared it.

It should not be necessary to prepare a separate glossary for each report. There should be many terms which will always be present and which can be set up in a standard glossary with which the work of firm members will always be consistent. It may, of course, be necessary to add a few terms in individual cases so that the glossary will be complete for the particular reports, but it is not to be expected that the additional clarity which a glossary would provide will come at high cost or inconvenience. This idea is simple but promising, and should have several desirable results. First, it should make possible with certainty the communication between skilled analysts. It should then be possible for the layman to consult the specialist and be assured of an accurate interpretation even though the author of the report is not contacted. Second, it should broaden the group who can confidently deal with financial data without assistance. Third, it should introduce an element of uniformity and stability into the work of large firms, which should make supervision easier and should increase the confidence of the client. Finally, the existence of very many glossaries prepared by individual firms should highlight the problem of communication, and should hasten the movement toward the achievement of standard terminology. In the meantime, the pitfalls of communication would be minimized and clients would be better served.

[2] The Bristol-Myers report for 1957 was supplemented by a booklet on investment terminology, but it was aimed primarily at the layman.

PUBLIC ACCOUNTING EXPERIENCE FOR PRIVATE ACCOUNTANTS

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Experience gained from the practice of public accounting is usually considered to be of great benefit to persons who later work in areas of private accounting. This fact is rarely questioned. However, one frequently asks, "How many years experience in public accounting is it best to obtain before I enter private accounting?" Or perhaps he says, "Should I obtain the C.P.A. certificate before I go into private accounting?" These and similar questions are asked by persons studying accounting in colleges and by persons in public accounting considering a change in employment.

The answers to these questions will be influenced, perhaps, in each location by the requirements of the particular state. In Georgia, my home state, the law requires an applicant for certification as a Certified Public Accountant to have three years experience in public accounting, with sufficient technical education in accounting acceptable in lieu of one year of experience. The law, obviously, does not intend to convey the idea that either two or three years of experience is all that a person needs in public accounting before he is an accomplished accountant. However, in establishing the minimum experience requirement for issuance of the certificate, the law thereby influences the minimum experience which a person will desire before leaving public for private accounting.

In order to obtain information upon which to more accurately base answers to the questions regarding benefits from public accounting experience, the author turned to people who are presently working in the area of private accounting and who hold Georgia C.P.A. certificates. Questionnaires were sent to 65 C.P.A.'s listed in the 1958 Georgia State Board of Accountancy Register of Certified Public Accountants who listed their places of employment as commercial or industrial firms. Responses were received from 50 of these questionnaires, and the following comments are based upon this 77 per cent reply.

Of the 50 persons responding, four had received no experience in public accounting and one had had less than one year, since their certificates were issued before the present experience requirement of the state became effective. The median number of years of experience in public accounting by these persons is five. Thus, it is immediately obvious that these people received more than the minimum experience required by the state to hold a C.P.A. certificate. As indicated by the following table, more of the individuals had worked five years in public accounting before going into private accounting than any other number of years.

Years of Experience in Public Accounting by Georgia C.P.A.'s Presently Engaged in Private Accounting

Years	*Number of C.P.A.'s*
Less than 1	5
2	5
3	7
4	4
5	12
6	3
7	2
8	5
9 or more	7
Total	50

Had this experience been of benefit to them was an inquiry made of these C.P.A.'s. Forty-two (91%) of the respondents with public accounting experience stated that their experience had benefited them greatly in their work in private accounting. Only four (9%) indicated that the experience was of moderate benefit, and no one said that he had failed to receive benefit from the work in public accounting.

Judging from the titles which the respondents listed as their present positions, these people have been successful in private accounting. Ten of the titles were of a miscellaneous nature and included little or no repetition. The positions listed by the 40 others are shown below; some individuals had more than one title.

TITLE OF POSITIONS LISTED BY 40 GEORGIA C.P.A.'S PRESENTLY ENGAGED IN PRIVATE ACCOUNTING

Controller	19
Secretary	9
Treasurer	8
Vice President	6
Chief Accountant	4
Total	46

It is assumed, therefore, that these people are in a position to speak with authority as to the benefits of public accounting experience and that their opinions will be of value to others.

Although these C.P.A.'s feel that their experience in public accounting was of benefit to them, the possibility remains that an individual could receive greater benefit from a corresponding length of time spent in private accounting. However, only two (4%) of the 46 C.P.A.'s with public accounting experience felt that they would have benefited more by working in private accounting the length of time which they spent in public accounting. It is significant to note that these two persons are at the extremes of the time spent in public accounting; one with less than one year of experience and the other with 25 years of experience. Perhaps this indicates that public accounting experience within a range of years duration will be of optimum benefit and that a private accountant devoting either too few or too many years to public accounting would be at least equally benefited from the same time in private accounting.

The action which a person has taken himself is not necessarily the same as that which he would recommend to others. Consequently, these C.P.A.'s were asked if they would recommend to a college graduate who is primarily interested in a career in private accounting that he obtain a C.P.A. certificate before entering the private area. To this question, two persons did not make a recommendation. Of the 48 persons making a recommendation, 44 (92%) stated that they would recommend that a prospective accountant obtain the C.P.A. certificate and related public accounting experience. The four who did not recommend public accounting experience are not the same four who had received no public accounting experience themselves.

An interesting fact developed from the answers to the question of how many years of public accounting experience they would think necessary to be of greatest benefit to a person entering private accounting. In 75 per cent of the cases, the number of years suggested was less than the person's own experience. Several comments were made on this point indicating that a person's ability would have to be considered; therefore, an exact number of years could not be stated. The idea was expressed several times that the accountant should stay in public accounting until he reached senior status and had some experience in supervising the work of others and in advising management.

Other comments expressed the thought that a person with only two years ex-

perience, the minimum required to obtain the certificate, would be qualified to do little more than work in the internal auditing department. For a person to advance to the rank of controller or treasurer, more than two years experience appears to be desirable. The fact becomes very clear, therefore, that it is not the possession of the C.P.A. certificate itself which aids an accountant in becoming successful in private accounting but it is the knowledge and skills obtained from his experience in public accounting. One of the persons holding a certificate who had no experience in the public area made this statement, "I took C.P.A. course, passed examination, hold certificate, but have never practiced. The course was, I believe, helpful from a point of view of personal satisfaction but had no effect on employment."

Forty-three respondents did suggest the approximate number of years of experience in public accounting which they thought would be of greatest benefit to a person later entering private accounting. The table shown below summarizes their replies. In cases where a span of years was suggested, the mid-point was taken for purposes of this compilation.

The median and mode number of years recommended is four. The longest period of time mentioned by anyone was 10 years, and that suggestion was made by giving the span of years from two to ten. Possibly,

YEARS OF EXPERIENCE IN PUBLIC ACCOUNTING RECOMMENDED FOR PERSONS DESIRING TO ENTER PRIVATE ACCOUNTING

Years Recommended	*Number of Recommendations*
2	7
2½	2
3	7
3½	4
4	10
4½	2
5	6
Over 5	5
Total	43

the general conclusion can be drawn from these recommendations that a person with the initiative, background, and ability to be a successful accountant probably will have received sufficient training from the public accounting field in approximately four years.

This group of C.P.A.'s was asked if they believed that their company would hire a C.P.A. with the minimum of two years experience at a higher salary than that being paid to a person of similar qualifications who had worked with their company for two years. In other words, would the accountant be better off financially if he had worked the two years with the industrial-type company rather than working in public accounting? Of the 46 responding to this question, 37 (80%) thought that the C.P.A. would be paid the higher salary. Although it is not their recommendation that a person leave public accounting with the minimum experience of two years, it is their opinion that even then the person would be in a favored position in private accounting.

Public accounting firms are not operating training schools for people who definitely intend to follow careers in private accounting. The fact remains, however, that each year numerous persons leave public accounting firms to accept jobs in private accounting. People who plan to eventually accept jobs in private accounting should realize that their time in public accounting is more than a hurdle to obtaining the C.P.A. certificate. Realizing that it is the technical training, proficiency as an accountant, and general knowledge gained from work in public accounting that is going to mean success in their work later, these accountants perhaps will stay longer in the public field and contribute more to their work while there. The individual accountants and the public accounting firms stand to gain from such realization.

TWO-VARIATE ANALYSIS

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IN MOST works on cost accounting the topic of variance analysis is handled by multiplying the current value of one variate by the change in the other variate, subtracting this product from the total variance, and then attributing the difference to the second variate.

For example, if 1,000 units are sold at \$10 per unit in 1957 and 1,100 units are sold at \$12 per unit in 1958, the total variance of \$3,200 (\$13,200 less \$10,000) would be explained by either of the following methods:

Price variance, 1,100 units @ \$2.00 per unit	\$2,200
Quantity variance (\$3,200 less \$2,200)	1,000
Total variance	\$3,200

OR

Quantity variance, 100 units @ \$12.00	\$1,200
Price variance (\$3,200 less \$1,200)	2,000
Total variance	\$3,200

Both methods appear in the accounting literature; both explain the total variance, but the explanations are different; both methods are wrong. This paper shall set forth a method which is mathematically correct and easy to compute. But first a word about the applications of two-variate analysis.

Two-variate analysis is appropriate when any two factors are multiplied to produce a result; it is the analytic principle employed in the following applications, as well as in others too numerous to list:

1. Analyses of the variance of actual vs. standard costs of material, labor, or burden.
2. Gross profit analysis.
3. Budgetary analysis.
4. Analysis of labor efficiency.
5. Theoretic price analysis.

For example, actual usage and the actual price are multiplied to produce the actual material cost. Standard material usage and standard price are multiplied to produce the standard material cost. The difference between actual material cost and the standard material cost is the material variance. It arises from variations in usage and price. Thus there are two variates: usage and price.

Variance in gross profit from one period to another is the change in net sales minus the change in the cost of goods sold. The sales are composed of units sold multiplied by prices per unit. The variance in sales may be subjected to two-variate analysis; so may the variance in the cost of goods sold. To explain these two variances, each the product of two variates, is to explain the change in the gross profit.

In the analysis of any budgeted component, the rate of business activity may be multiplied by an efficiency factor, actual and budgeted. The variation of the actual results from the budget estimate may be explained by two variates: rate of activity and efficiency.

When a laborer's performance is compared with predetermined standards, his variance from a predetermined standard may be attributed to the hours worked and the efficiency with which he performs.

In any consideration of the economics of price, the two basic variates are the unit price and the quantity. However, the quantity may be correlated with advertising outlay, selling effort, sums spent on product research, or any other desired

variate. As long as one result (total variance) is attributed to two variates, the analysis is a two-variate one.

Any two variates which vary will produce three results. To prove this statement:

Let:

R_0 be revenue in the base year

R_1 be revenue in the following year

$\Delta R = R_1 - R_0$ = change in revenue, or variance

P_0 be price in the base year

Q_0 be units sold in the base year

P_1 be price in the following year

Q_1 be units sold in the following year

$\Delta P = P_1 - P_0$ = price change

$\Delta Q = Q_1 - Q_0$ = change in the number of units sold

Then:

$$R_0 = P_0 \times Q_0$$

$$R_1 = P_1 \times Q_1$$

$$\begin{aligned}\Delta R &= R_1 - R_0 = (P_1 \times Q_1) - (P_0 \times Q_0)\\ &= (P_0 + \Delta P)(Q_0 + \Delta Q) - (P_0 \times Q_0)\\ &= (\Delta P \times Q_0) + (\Delta Q \times P_0) + (\Delta P \times \Delta Q)\end{aligned}$$

Thus it has been shown that where two variates have changed, there are three components of the result, which in this case are:

a. The variance resulting only from price change, assuming that quantity had not changed.
b. The variance resulting only from a change in the number of units sold, assuming that price had not changed.
c. The combined effect of the change in price multiplied by the change in the number of units sold.

In a generalized mathematical notation, this could be stated as follows:

$$\begin{aligned}\Delta R &= (x + \Delta x)(y + \Delta y) - xy\\ &= (\Delta x)y + (\Delta y)x + (\Delta x)(\Delta y)\end{aligned}$$

where x and y are the variates in the base period, while Δx and Δy are the changes in the variates, as compared with the base period. The total variance is ΔR.

Using the figures in the initial example of gross profit analysis, the total variance would be explained, as follows:

Example 1

A. Quantity variance, 100 units @ \$10.00...	\$1,000
B. Price variance, 1,000 units @ \$2.00......	2,000
C. Combined effect, 100 units @ \$2.00......	200
Total variance......................	\$3,200

Figure 1 provides a geometric interpretation of two variates, both of which are increasing; this is analogous to the foregoing example; the areas A, B, and C in figure 1 correspond with lines A, B, and C of the preceding paragraph.

By using the suggested method, one avoids the distortion which results when the combined effect is lumped into one or the other of the variates. The suggested method may be applied regardless of whether the variates increase or decrease.

Figures 2, 3, and 4 illustrate these other possibilities for change; examples 2, 3, and 4 are each related to the figure with the corresponding number.

The delta cross-products of the differ-

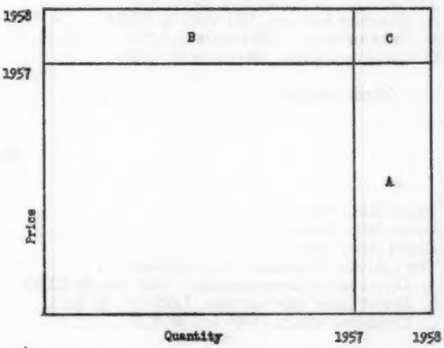

FIG. 1

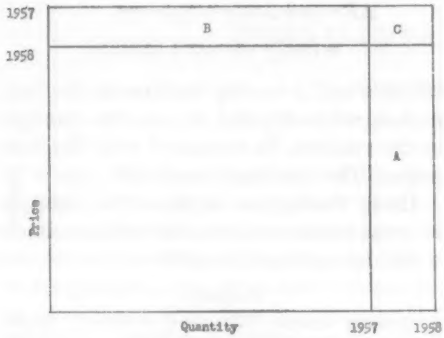

Fig. 2

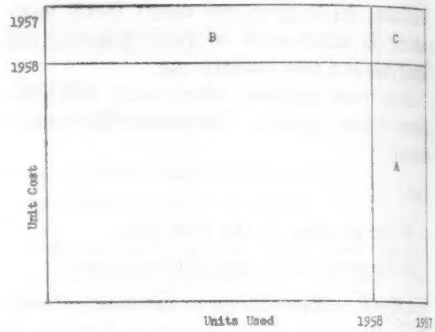

Fig. 4

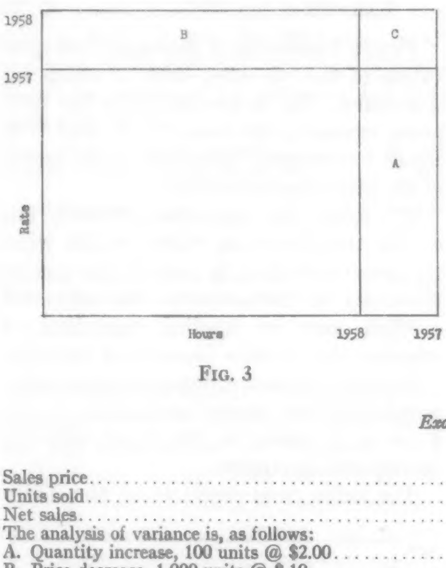

Fig. 3

ential calculus can be ignored because they are infinitesimal; however, in business analyses these cross-products, or "combined effects," are large enough to distort any element to which they are added residually, or else the analysis of variance is not worth making. The combined effect is so small as to be worth ignoring only in those cases where nearly all the change is due to one variate. In those cases there is nothing to analyze.

Example 2

	1957	*1958*	*Increase (Decrease)*
Sales price	$ 2.00	$ 1.90	($ .10)
Units sold	1,000	1,100	100
Net sales	$2,000	$2,090	$ 90
The analysis of variance is, as follows:			
A. Quantity increase, 100 units @ $2.00			$ 200
B. Price decrease, 1,000 units @ $.10			(100)
C. Combined effect, 100 units @ ($.10)			(10)
Total variance			$ 90

Example 3

	1957	*1958*	*Increase (Decrease)*
Direct labor rate	$ 2.00	$ 2.15	$ .15
Direct labor hours	3,000	2,900	(100)
Direct labor cost	$6,000	$6,235	$ 235
The analysis of variance is, as follows:			
A. Direct labor hours decrease, (100) hrs. @ $2.00			$(200)
B. Direct labor rate increase, 3,000 hrs. @ $.15			450
C. Combined effect, (100) hrs. @ $.15			(15)
Total variance			$ 235

Example 4

	1957	1958	Decrease
Cost of material A, per unit	$ 1.50	$ 1.45	$ .05
Units of material A used	5,000	4,000	1,000
Cost of material A used, total	$7,500	$5,800	$1,700
The analysis of variance is, as follows:			
A. Decrease in quantity, 1,000 units @ $1.50			$1,500
B. Decrease in unit cost, 5,000 units @ $.05			250
C. Combined effect, 1,000 units @ $.05			(50)
Total variance			$1,700

THE USES OF RESERVES ON THE RIGHT-HAND SIDE OF THE BALANCE SHEET

HELEN M. SMITH

THE word "reserve" has been used to describe a diversified grouping of accounts on the right-hand side of the balance sheet. The various uses and capacities in which the word serves, as well as the many different methods of its creation, have caused perplexity for a long period of time. It is especially desirable that accuracy and some conformity prevail in the presentation of reserves on published financial statements because of the need for accurate information for purposes of financial analysis.

The ambiguity of the term prompted the Committee on Accounting Procedure of the American Institute of Certified Public Accountants in 1953 to recommend to its members that only certain types of liabilities, known and unknown, be designated as reserves; that they be created by earned surplus segregations, no part to affect current costs, losses, or income whatsoever; and that they be restored to earned surplus when the conditions which created them are no longer present. Further, classification of such reserves as part of the shareholders' equity on balance sheets is to be preferred.

The Committee on Terminology of the Institute corroborated in the limited use of the term "reserve" with the recommendation that amounts for betterments or plant extensions and for excess cost of replacement of property be included.

An attempt was made in an independent study to determine the presentation of reserves in published financial statements at the present time. An examination of 466 published financial statements of 75 companies covering the years 1949 through 1958 revealed varying types of classifications on the right-hand side of the balance sheet which were *either expressly designated as reserves, or which appeared under a reserve section of the balance sheet or as a part of earned surplus.* The types of companies examined included:

Insurance	3
Extractive	16
Funds	4
Utilities	5
Industrial	23
Chemical	8
Service	13
Retail	3
	75

A total of 153 such classifications were shown on the statements. The following discussion relates the results of the examination.

Contingency Reserves

Twenty-five of the companies carried contingency reserves in their balance sheets; 19 of these reserves appeared under a separate caption above the equity section, while six companies included the reserve in the capital section under surplus. Two of the companies, in 1951 and 1952, moved the presentation of the reserve to the capital section, presumably in deference to the aforementioned Institute pronouncement. Three companies, in 1950, 1953, and 1955, eliminated their contingency reserves through the restoration of the amounts to surplus.

There were instances, however, wherein liabilities for contingencies were not provided for in the books, but were disclosed through the use of footnotes to the financial statements. This occurred in 9 cases which brings the total to 36, or approximately 50%, of the companies recognizing some contingent liability.

Upon reflection, the question is raised

whether this ratio is proportionately correct for 75 large companies with diversified and extensive operations. The primary question appears to be whether or not a contingent liability exists in an amount which is at the present time, or may concurrently with the present time, become material in amount. A perplexity arises in whether the omission of any information respecting a contingent liability, without intent to conceal, makes the financial statement unreliable. It is to be noted in this respect that the deficiencies commonly cited by the Securities and Exchange Commission include failure to disclose in the balance sheet all contingent liabilities with full particulars.

Theoretically, this account classification includes only items abou which there is a question as to the existence of a liability. From the practical viewpoint, however, it does contain established liabilities, such as pensions, commitments, etc., of which the final amount needs to be determined. This was a finding which raised a question about the factors affecting the designation of these judgmental classifications. Certainly, footnotes to accompany contingency classifications would be clarifying.

In one instance, the following was shown under the surplus section of the balance sheet:

Reserve:
For Long-Term Lease Commitments..... $—
For Contingencies.................... —

The amount was ***not*** added into the total of the surplus amount for either of the reserves shown, and if the reader of the statements were not alert to this device, he could easily conclude that an amount had actually been earmarked from surplus for the purposes outlined. A balance sheet footnote might not have been so misleading.

Inventory Losses

In line with the recommended procedure for showing possible inventory losses as reserves, 12 companies included these items on the right-hand side of the balance sheet using the following descriptive terms:

Reserve for Inventories—From LIFO to FIFO Basis
Allowance for Inventories
Reserve for Supplies Inventory
Reserve for Possible Market Decline in Inventories
Reserve for Inventories
Reserve for Inventory Decline
Reserve for Inventory Adjustment
Reserve for Possible Inventory Losses
Reserve for Inventory Commitments
Reserve for Anticipated Replacement of Inventory
Reserve for Inventory Price Decline
Provision for Excess Replacement Cost of Inventories

One of these inventory reserves appeared under the surplus caption of the balance sheet. The others appeared under a reserve section of the balance sheet. Scanning the titles indicates that these losses were not definite at the balance sheet date, but the exact nature of each reserve is difficult to ascertain.

Other Reserves

Provisions for the excess cost of replacement of property appeared on four financial statements in the reserve sections, described as follows:

Replacement of Fixed Assets at Higher Than Original Costs
Replacement of Machinery and Buildings
Reserve for Increased Cost of Replacements
Reserve for Property Retirement

Allowances for betterments or for plant extensions were included under the reserve captions of 12 companies as:

Reserve for Maintenance
Reserve for Repairs and Insurance (net of related taxes on income)
Reserve for Furnace Repairs
Reserve for Repairs
Reserve for Rebuilding and Repairs
Reserve for Repairs and Claims
Reserve for Office Modernization

The following accounts also appeared. However, these are of such general definitions as to cause the reader to wonder about their particular nature:

Operating Reserve
Deferred Credit and Operating Reserves
Deferred Credits to Income and Operating Reserve
Operating Reserves and Deferred Credit
Reserve for Depreciation, Obsolescence, etc. (shown on the right-hand side of balance sheet)

Estimated Liabilities

Indicative of the use of the term "reserve" for items for which the Committee on terminology had recommended the use of a liability designation were the following:[1]

Reserve for Tax Contingencies
Insurance Reserves
Reserve for Workmen's Compensation
Reserve for Insurance and Other Risks
Casualty and Other Reserves
Reserve for Compensation Insurance
Reserve for Workmen's Compensation and Employee Benefits
Reserve for Estimated Expenses
Reserve for Incentive Compensation
Reserve for Deferred Incentive Compensation Awards
Reserve for Employment Contracts
Reserve for Deferred Contingent Compensation
Additional Compensation Reserves
Reserve for Injury and Damage Claims
Reserve for Employee Termination

Reading the titles of the above accounts creates questions regarding the liability for which provision is being made. Scanning the notes to the balance sheet was not enlightening with respect to these liabilities. Evidence of the concreteness of the liability is to be desired.

Beginning with the year 1954 and extending through the year 1957, there appeared a surge of reserves for deferred Federal taxes on income. The following indicates the rate at which these reserve accounts appeared in the financial statements studied:

Number of Appearances	*Year*
1	1954
4	1955
7	1956
1	1957

In most instances, explanations of this new account appeared in the notes to the financial statements. The financial statements of the companies showing the item included it with reserves or set it above the equity section of the balance sheet.

If reserves are intended to be appropriations of earned surplus for indefinite possible future losses as indicated by the Institute's recommendations, then designating this classification as a reserve would be inappropriate. However, as this deferred item becomes payable when taxable income is realized in the future, and is related to the reported income of a prior period, the concept of a reserve does not appear inconsistent as the term "reserve" is still being used at the present time.

Perhaps acceptance of the recommendation of the American Accounting Association 1951 Committee on Concepts and Standards that the term "reserve" be wholly eliminated from the balance sheet would give a clean slate on which to start building new definitions which truly represent the items they attempt to describe.

The conditions surrounding the actual definitive processes make it difficult to draw the line between true reserves and "so-called" reserves although the Institute recommendations to accountants make clear and definite distinctions. Errors of judgment in designation (which do not extend to balance sheet groupings) and clinging to traditional methods weaken any quick change to the methods specified in the Institute's directive for correct usage.

The examination disclosed that 14 companies had provided for reserves for employee benefits and pensions. Of particular interest is that these companies had clarified their position with respect to current charges and the unfunded portion of the pension by the use of footnotes. As these "reserves" are based on annuity costs of past service which are spread over a period of present and future years and are not to be charged to surplus according to the Institute's recommendations, this is another instance of the application of the term to a calculable liability.

Other reserve designations which appeared infrequently, and, therefore, could

[1] Committee on Terminology, *Accounting Terminology Bulletins, Number 1, Review and Resume*, American Institute of Accountants, 1953, pp. 26–27.

not be classified into homogeneous groupings were as follows:

Reserve—Recapture Profits, Federal Maritime Administration Operating-Differential Subsidy
Reserve—Deposits to Insure Cylinder Returns
Reserve—Miscellaneous
Reserve—Other
Other Reserves
Reserve for Unearned Discount
Reserve for Interest, Taxes, etc.

Four companies showed reserves earmarked for foreign exchange, Canadian exchange, etc.

The right-hand side of the balance sheets of the three insurance companies included in the study showed the following uses of the term "reserve":

Reserve for Policies, etc.
Reserve for Dividends
Reserve for Claims Awaiting Proof
Security Valuation Reserve
Reserve for Excess of Statutory Over Case Loss Reserves
Unearned Premiums Reserve
Loss and Loss Expense Reserve
Reserve for Taxes
Voluntary Policy Reserve Strengthening Addition
Reserve for Future Revaluation of Policies
Policy Reserves
Special Policy Reserve Additions

These illustrations point out the multitudinous usage of the word "reserve" on present-day balance sheets.

The attempt to clarify the haze surrounding the use of the term "reserve" has not been American centered. British accountants in 1943 advocated the use of the word to denote unknown liabilities, whereas the term "provision" would be used to indicate those liabilities wherein the amounts could not be determined with substantial accuracy. Thus, in Britain, amounts representing excess costs of replacement of property, possible future inventory losses, or for betterments or plant extensions would be designated as provisions while in the United States these items, according to the Institute's directive, should be designated as reserves. The American standard, by the inclusion of certain exceptions, contributes to the confusion, and perhaps therein lies a partial explanation to the wide and varied use of the term as disclosed in the financial statements examined.

Summarization

Because an accurate estimation of the financial position of a company, as disclosed by its balance sheet, may be difficult if there is a lack of information as to the nature of disclosed reserves, and because contingent liabilities have been shown either as reserves on the right-hand side of the balance sheet or as balance sheet footnotes, improvement in the methods of reporting reserves has been sought.

An examination of the balance sheets of 75 companies disclosed that the use of the term "reserve" is applied to a multitude of liabilities, known and unknown, to an extent that does not seem to conform to the standards which are desired for useful financial reporting. Only in the area of contingency reserves does any improvement appear in that companies are changing their practices to show these reserves as part of the earned surplus section of the balance sheet rather than under a separate designation. Wide attention to this semantics problem may correct the ambiguity of the term reserve as it currently appears on balance sheets.

INVENTORY VALUATION AND THE SHORT-RUN COST FUNCTION

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BY 1955 IT could be said "Cost accounting principles appear to be fast incorporating the wisdom of the economists. Far from constituting an impediment to profit maximization via marginal principles, the new accounting is providing techniques by which these can be applied to business."[1] Break-even charts (profit charts), flexible budgets, and direct costing are all manifestations of the investigation by business of the short-run cost function. Assumptions are made by cost accountants which are open to criticism. Many of the assumptions result from the difficulty of implementing the concept on which the analyses are based. Some, however, result from an incomplete analysis of the problem. Although economic theory is not immediately concerned with the shape of any specific cost function, economists have pursued investigations as ambitious as any envisaged by cost accountants and engineers. These investigations have also faced many problems inherent in the accounting data available. Much attention has been directed to the problems of heterogeneous output and technological change in deriving cost functions from accounting data. Less attention has been given to the fundamental problem of restating accounting information in relevant form for management purposes. Recently it has been pointed out, ". . . there is much to be gained by the cost accountant through correct analysis of his problem on a theoretical level before he starts to gather the data that will aid him in answering the questions of management."[2]

The concept of inventory valuation is of fundamental importance to accounting information. Without casting doubt on the validity of conventional procedures used to compute profits available for dividends and profits subject to taxation, it might be questioned whether those methods are relevant for decision-making purposes. It is not necessarily true that the periodic operating statements will provide useful information for management without being modified to suit the purpose. The figure for total cost calculated in the operating statement is arrived at after making adjustments for changes in inventories. If we are to relate the calculated total cost to some measure of the sales as an index of output during the period (ignoring the problem of heterogeneity), then we must eliminate from costs that part incurred in increasing the stock of materials, whether raw materials, work in process, or manufactured goods. Even in the simplest type of manufacturing firm, total cost is affected by work done which consists, broadly, of three variables:

(a) receiving raw materials
(b) processing
(c) shipping.

These three will only coincide in the special case where inventories are constant. Unless inventory quantities remain constant, even a single-product firm must analyze the effect of three variables on its cost structure. This may be illustrated as follows:

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[1] James S. Early, "Recent Developments in Cost Accounting and The Marginal Analysis," *Journal of Political Economy*, June 1955, pp. 227–242.

[2] G. Gibbs, "New Cost Accounting Concepts," THE ACCOUNTING REVIEW, January 1958, p. 101.

$$Y=f(X, Z', W'.)$$

where

Y = total cost,
X = sales,
Z' = change in raw material stocks,
W' = change in manufactured stocks.

If we wish to use sales as the measure of output we must value the change in inventories at the part of cost, Y, which would have been saved or incurred if the inventories had remained constant. That is, we must value the change in inventories at marginal cost. If we estimate the marginal cost of output by reference to calculations of total cost, then the latter must not be biased by an irrelevant concept of inventory valuation.

That inventories must be valued at cost if we are to use sales as the measure of output has long been recognized in the dictum that we must "match costs with revenue." A. Herrick makes the point that, "An important factor in the determination of net income is the amount at which inventories are to be stated for carrying forward against the income of future periods." He quotes Bulletin 29 of the Committee on Accounting Procedure of the Research Department of the American Institute of Accountants; "... the position being taken that the only proper basis was cost. ..."[3] But "cost" is an ambiguous term. We must determine, therefore, the concept of cost to be used as a basis for each type of decision. S. J. Broad states, for example, "when we regard an inventory as a step in the process of allocating the aggregate costs between the current and future periods it is obvious that the inventory must be based on cost." But later he writes: "I think it is generally accepted that the amount of overhead to be included in inventory costs should in general be related to a normal level of operations. ... The exclusion of all overhead from inventory costs, on the other hand, does not result in an appropriate matching of costs against the related revenues and thus is not a generally accepted procedure."[4] G. Amerman has, however, pointed out that a major objection to the use of a conventional absorption cost income statement is that: "It does not distinguish between profits resulting only from sales and those resulting from inventory changes."[5] He deduces that under absorption costing, recorded profit is a function of sales and production.

There are various possible cases that may arise where the change in inventories is not valued at marginal cost. The two broad divisions are:

(a) valuation of change of inventory at more than marginal cost,
(b) valuation of change of inventory at less than marginal cost.

If inventory increases in case (a), total cost will be understated as a function of sales. This is a consequence of carrying forward some of the fixed costs to a subsequent period via the fixed cost component of the inventory valuation. If inventory increases in case (b), total cost will be overstated as a function of sales. This is a consequence of charging some of the marginal inventory costs against the current period. It must be stressed that we are concerned with the change in physical quantity and the valuation of the increase or decrease, not with the valuation of the inventory at the end of each period. This point is of importance where inventory is conventionally valued at full average cost in the preceding period. The fact that inventory is valued at full average cost at

[3] A. Herrick, "A Review of Some Recent Developments in Accounting Theory and Practice," THE ACCOUNTING REVIEW, October 1950, p. 363.
[4] S. J. Broad, "Valuation of Inventories," THE ACCOUNTING REVIEW, July 1950, p. 228.
[5] G. Amerman, "Facts About Direct Costing for Profit Determination," *Accounting Research*, April 1954, p. 161.

the end of each period is not prima facie evidence that the change during each period is valued at more than marginal cost. Production may have increased from one period to the next by such an amount that the effect of the fall in average cost outweighs the change in quantity at marginal cost.

Consider a firm with constant marginal cost of production b; in this case,

$$\frac{Y}{N}=\frac{a+bN}{N}>b$$

where

Y = total cost,

N = volume of production,

a = fixed cost,

b = marginal cost of production.

Stock at the end of each period is, we assume, conventionally valued at

$$K_r\left(\frac{a+bN_r}{N_r}\right)>bK_r$$

where

K_r = volume of inventory at end of period r.

We are concerned with the valuation of a change in K,

$$\text{i.e. } K_r-K_{r-1}.$$

It can be shown that in certain cases this may be less than the marginal cost of the change where inventory is valued at full average cost.

$$\text{i.e., } K_r\left(\frac{a+bN_r}{N_r}\right)-K_{r-1}\left(\frac{a+bN_{r-1}}{N_{r-1}}\right)<(K_r-K_{r-1})b.$$

Now,

$$K_r\left(\frac{a}{N_r}+b\right)-b\cdot K_r<K_{r-1}\left(\frac{a}{N_{r-1}}+b\right)-b\cdot K_{r-1}$$

(a) where

$$\frac{K_r}{N_r}<\frac{K_{r-1}}{N_{r-1}}$$

(b) i.e.

$$\frac{K_r}{K_{r-1}}<\frac{N_r}{N_{r-1}}.$$

That is, given constant marginal cost, the full average cost valuation will produce a figure for the inventory adjustment which is less than the marginal cost of the change where,

(a) the ratio of closing inventory to production is less than it was in the preceding period,

(b) i.e., the ratio of closing inventories at the end of successive periods is less than the ratio of production in those successive periods.

The previous paragraph discussed the position where manufactured goods are valued at the average cost to manufacture during the previous period. If on the other hand manufactured goods are valued at marginal cost plus a share of the overhead based on a "normal" level of activity, the fluctuations in cost allocated to any period are more easily determined.

Inventory in this case is valued at,

$$K_r\left(\frac{a}{M}+b\right)$$

where

K_r = volume of inventory at end of period r,

M = "normal" level of activity,

a = fixed cost,

b = marginal cost per unit.

The valuation of the change is therefore,

$$(K_r-K_{r-1})\left(\frac{a}{M}+b\right).$$

The amount by which cost is overstated or understated is

$$(K_r - K_{r-1})\frac{a}{M}$$

i.e., by the fixed expense part of the inventory adjustment. Under full average cost the amount by which cost is overstated or understated depends not only on the inventory change but on the ratio of inventory and production in successive periods.

The problem then is to value inventory on hand where successive valuations determine the cost allocated to each intervening period. This problem has two aspects:

(a) *Raw materials*. Costs are incurred in receiving materials in addition to the cost of the materials themselves. What these costs are is determined not only by the volume of materials received but (in general) by the volume of other types of activity; i.e. by manufacturing and shipping.

(b) *Manufactured goods*. In addition to the cost of the material content, costs are incurred in transforming the materials into the desired product and placing it in store ready for shipment; or, in the case of work-in-process, of bringing it to its existing state of completion. The amount of these processing costs depends not only on the volume of processing but (in general) on the volume of other types of activity; i.e. receiving raw materials and shipping finished goods.

If, however, we make the assumption that cost is a linear function of output (within a specified range of output), we need not consider the interaction of the volume of the three types of activity. That is, for example, we may assume that the marginal cost of processing within a specified range of output is not dependent on the volume of the other aspects of production. This assumption will only hold good as long as the three types of activity are carried on within certain levels of output. The word "output" is here used generally to denote some measure of any of the three broad divisions of activity.

Let us consider the case of a merchandising firm which merely buys and sells goods without processing them in any way. Recasting the general equation in linear form, and ignoring the term for manufactured inventory;

$$Y = f(X, Z', W'.)$$

becomes

$$Y = a + b'X + cZ'$$

where

Y = total cost,
X = volume of sales,
Z' = change in volume of inventories,
a = fixed cost,
b' = marginal cost of goods sold,
c = marginal cost of increase in inventories.

The accounting equation is expressed in the form;

$$Y - cZ' = a + b'X.$$

This is not a very convenient type of equation to use when analyzing historical data. It involves two estimates which create difficulties:

(a) the volume of inventory at successive intervals from which is calculated a series of inventory changes,
(b) the marginal cost of the inventory changes.

The calculated figure for total cost in the accounting equation ($Y - cZ'$) depends on the accuracy of the two estimates. In making these estimates, moreover, we are guilty of building into the equation the information which we are trying to estimate from a series of such equations. In the short run, where inventory changes are more significant (in relation to the volume of

activity), any errors become more serious than they would be, for example, in annual accounts.

The original equation is the more useful for the purpose of regression analysis. The second type of estimate (the marginal cost of the inventory change) is calculated as part of the multiple regression equation. It may be still further simplified to eliminate the need to estimate physical inventory changes. Let us assume that X and Z' are measured in identical units so:

X = number of units sold,

Z' = number of units in stock change.

Therefore

$$Z' = Z - X$$

where

Z = number of units purchased.

Now,

$$Y = a + b'X + cZ'$$

becomes

$$Y = a + b'X + c(Z - X)$$

i.e.

$$Y = a + (b' - c)X + cZ$$

or,

$$Y = a + bX + cZ.$$

Y = total cost
X = volume of sales
Z = volume of purchases
a = fixed cost
b = marginal selling cost
c = marginal buying cost.

This final equation is in convenient form for regression analysis of historical data. It avoids the problems associated with changes in inventories; in particular, the quantity of inventory at each point of time need not be estimated and the marginal cost of inventory changes is calculated as part of the regression equation. To convert the equation to one expressing cost as a function of sales implies that we have information regarding the material content of sales. In the simple case,

$$Y = a + bX + cZ,$$

we assumed that sales and purchase were measured in units such that a unit of X was identical with a unit of Z. Let us denote the material content of sales by (Z) so that in this case $(Z) = X$. The cost function then becomes

$$Y = a + (b + c)X.$$

The procedure may be extended to include the case of transforming raw materials into finished goods. The equation in this case is,

$$Y = a + b'X + cZ' + d'W'$$

where

Y = total cost
X = volume of sales
Z' = change in volume of raw materials
W' = change in volume of manufactured goods
a = fixed cost
b' = marginal cost of goods sold
c = marginal cost of change in raw materials
d' = marginal cost of change in manufactured goods.

The corresponding accounting equation would be,

$$Y - cZ' - d'W' = a + b'X.$$

Let us assume that Z' is measured in units such that a unit of Z' is included in a unit of W' and X. We make this assumption merely in order to denote the constant measuring the material content of finished goods by unity.

Therefore

$$Z' = Z - W$$

where

Z = number of units purchased
W = number of units manufactured

and

$$W' = W - X$$

where

W = number of units manufactured
X = number of units sold.

So that

$$Y = a + b'X + cZ' + d'W'$$

may be expressed as

$$Y = a + b'X + c(Z - W) + d'(W - X)$$

i.e.

$$Y = a + (b' - d')X + cZ + (d' - c)W$$

or

$$Y = a + bX + cZ + dW$$

where

Y = total cost
X = volume of sales
Z = volume of purchases
W = volume of processing
a = fixed cost
b = marginal despatching cost
c = marginal buying cost
d = marginal processing cost.

Let us again denote the material content of finished goods by (Z) so that in this case $(Z) = X = W$. The cost function is therefore

$$Y = a + (b + c + d)X.$$

The equation may be extended to a more general form,

$$\begin{aligned} Y = a &+ b_1X_1 + b_2X_2 + \cdots + b_nX_n \\ &+ c_1Z_1 + c_2Z_2 + \cdots + c_nZ_n \\ &+ d_1W_1 + d_2W_2 + \cdots + d_nW_n. \end{aligned}$$

This would not only cover the case of a multi-product firm but would allow for work in process, i.e. goods in various stages of completion. The variables W_1, $W_2 \cdots W_n$ might represent each stage of processing or represent the output of each department within a single firm.

To analyze the cost-output relationship in terms of the above type of equation necessitates observations of the variables Y, X, Z, W. The first three, cost, sales, and purchases, are usually available from the accounting system of any firm which keeps its records on the accrual system; that is, in any firm which records its transactions as they take place, not when cash is passed in settlement of the transaction. The records are not very often kept in terms of standard (constant) prices so that correction is necessary to allow for price changes where use is being made of accounting records. Although cost may be a linear function of output within specified ranges of output, it is probable that changes in "fixed" and variable costs take place at the boundaries of certain ranges of output (e.g. overtime rates). For this reason it is necessary to use a constant operating period or adjust observations to a standard period.

The other variable, the volume of production, is however usually obtained as a by-product of successive inventory counts and this procedure has two disadvantages;

(a) physical inventories may be expensive and therefore infrequent,
(b) errors in counts are relatively more important as the period between successive counts is shortened.

Where records of production are not available for short periods, various alternatives are possible. If output is always in the overtime range, it may be valid to measure production by the input labor hours in each department; this would not be possible where output takes place within normal (non-overtime) hours. But in this case, in

the short run, wages may be assumed to be fixed for certain types of management decision. The marginal cost of processing is therefore confined to factory supplies and other expenses which may be relatively insignificant. The material content of the finished stock is not in question as this is being allowed for in a subsequent calculation; i.e. by relating the marginal cost of purchases directly to sales via an estimate of the material content of goods sold. It may be a reasonable approximation to ignore the marginal cost of processing where wages are fixed in the short run. In terms of the equation we equate $d=0$, where d denotes the marginal processing cost, and make our estimates on this basis. I am suggesting, that is, that manufactured goods be valued under certain conditions at the marginal cost of the material content.

Records may in fact be kept of the number of units processed. From these, in association with records of sale, it is possible to calculate changes in manufactured goods in successive periods. By using production specifications it is also possible to calculate changes in raw material quantities. This process is of course the same thing as changing standard quantities of material into production. But the problems of valuation remain unsolved and for this reason the type of equation suggested is tentatively put forward as being preferable where historical data are being analyzed by least squares regression. This by no means supports the use of statistical cost data where direct information is available. In certain industries, it is possible that the cost-output relationship is too complex to be discerned by accounting or engineering observations. In these industries, however, it may be equally difficult to determine the physical relationship between the independent variables. Coefficients of physical relationship are necessary in order to convert the regression equation to a function expressing cost as dependent on sales. For this purpose long term observations may be available. Errors in inventory counts are of less importance relative to production in the long run. The coefficients of average relationship obtained from long run observations, or from engineering specifications, may be introduced into a regression equation derived from short run data. In complex joint processes, the coefficients may be derived indirectly by calculating first differences from a series of input-output observations.

Summary

To relate cost and sales we must value inventory changes at marginal cost. The accounting equation, using this concept, is based on two estimates:

(a) volume of inventory at successive points of time
(b) marginal cost of the physical inventory change.

Errors in these two estimates are relatively more important as the period is shortened. We can eliminate the necessity of making these estimates by introducing purchases and production into the regression calculations as independent variables. For certain purposes it is desirable to convert the equation into a function expressing cost as dependent on sales (or any one of the independent variables). This requires coefficients of physical relationship among the independent variables, purchases, production, and sales. These coefficients may be estimated directly, from long term averages, or from first differences derived from data on input-output quantities in successive periods.

COMPARATIVE PROFESSIONAL ACCOUNTANCY—NETHERLANDS AND BELGIUM

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NETHERLANDS

The first treatise on double-entry bookkeeping published in Dutch appeared in 1543; its author was Jan Ympyn Christoffels, an Antwerp merchant. Christoffels had lived in Venice for twelve years and his work, *Nieuwe Instructie*, was a translation from the Italian of Paulo di Biancy, a writer with whom he was personally acquainted.

With the early foundation of bookkeeping in the Netherlands, it is surprising that the profession developed so slowly and so late. It was not until 1880 that the first public accountant's office was established there, but by 1905 there were four societies of accountants in existence.

The oldest professional body is Het Nederlandsch Instituut dan Accountants, founded in 1895, with a membership originally divided into first and second class. Its examinations included, in 1900, three modern languages, general commercial knowledge, mercantile law, and bookkeeping. A second body, the Nederlandsche Bond dan Accountants, was formed in 1902, again with two classes of membership. In that same year the Nederlandsche Acadamie van Accountants was set up, again with two membership categories, namely, practicing accountants and teachers of accounting and bookkeeping. A fourth body, the Nationale Organisatie van Accountants, came into being in 1903. Its ordinary members were those who had been engaged in commerce or industry for at least ten years, and in accounting practice for at least two years. First-class members were those who had been ordinary members for three years. The four professional bodies were amalgamated in 1934 under the title, Het Nederlandsch Instituut van Accountants; its headquarters is at Herengracht 491, Amsterdam.

The Vereniging van Academisch Gevormde Accountants was formed in 1927. Its address is Schweimlaan 1, Bussum, Holland. This society has 150 members, all trained in universities, and it works in close cooperation with the Netherlands Institute, maintaining with it a uniform rule of professional conduct. The Vereniging and the Instituut sponsored the Seventh International Congress on Accounting in Amsterdam in 1957.

The Netherlands Institute was established on English lines, its founders having been especially influenced by The Institute of Chartered Accountants in England and Wales.[1] In the early years, the accountant was regarded merely as an expert and confidential adviser to his client. In the course of time, attention was directed to the accountant's third-party relations. The original Rules on Professional Activities, drawn up in 1910, although subsequently modified and supplemented, still provide the basis for the conduct of professional activities by members of the Netherlands Institute.

The Institute immediately undertook

[1] See A. van Oss, "Public Accounting in Holland," *The Journal of Accountancy*, June, 1927; A. L. de-Bruyne, "A Diamond Jubilee: Progress of the Profession in the Netherlands," *The Accountant*, May 21, 1955; J. Kraayenhof, "The Profession in the Netherlands," *The Accountant*, October 1, 1955; and J. Kraayenhof, "International Auditing Practice," *The Accountant*, March 14, 1953.

the task of training accountants and of conducting examinations. It always has emphasized that the study of economics is of basic importance to practice. In a period of study averaging eleven years as, for example, in the course of evening tuition following a secondary-school education, three years are devoted exclusively to the study of economics. Therefore, there are four years' of preliminary study, three years' study of economics, and four years' study of accountancy. University courses in economics and, later, in accountancy were organized, supported by the close relation which always has existed between academic communities and Institute membership. In 1915, the Netherlands Economic College in Rotterdam started an accounting examination; in 1929, the University of Amsterdam followed this procedure, and finally in 1953 it was adopted by the State University in Groningen. Persons who hold the Institute's Accountancy Diploma, or a similar diploma awarded by a Netherlands university or college, are eligible for membership in the Institute. There are about 1,125 members at the present time, of which 56 per cent are in practice, 14 per cent in public service, 21 per cent in industry, and the remainder retired. Of the Institute membership, about 100 hold a diploma issued by a university or college.

The Institute recognizes candidates for membership, registering those who have given proof of sufficient knowledge of bookkeeping to undertake the subjects included in its examination syllabus. Registered candidates follow courses organized by the examining board and present themselves for examinations annually. They may not call themselves auditors or act as auditors until they have acquired the Institute's Accountancy Diploma. At present there are about 3,100 registered candidates for membership.

The examining board is comprised of 34 members of the Institute. The preliminary examination covers the technology of commerce, mathematics, statistics, advanced bookkeeping, law, and taxation. In the economics examination attention is directed to both social and business economics. The final examination includes accounting and auditing theory and practice. Training is planned so that studies may be pursued in the evening. As there is a separate examination in each of the subjects mentioned, candidates are required to pass eleven tests before they can be awarded the Institute's Diploma. During the last five years, 256 students have been admitted to the Institute.

Members of the Institute's council are elected at the annual general meeting. There are nine members; three of these resign each year and are ineligible for immediate reelection. Various committees are appointed by the council; one of these is the Committee of Advice on Professional Matters, which is charged with the study of all problems of a professional or technical nature. This committee issues reports from time to time on important issues.

The administration of internal discipline is entrusted to two independent bodies, the Discipline Committee and the Appeals Committee, whose members are elected at the annual general meeting. The official organ of the Institute is *De Accountant*, published monthly and now in its sixtieth year. Professional accountancy is not legally protected and, consequently, any person who desires to do so may call himself an accountant. In the course of years, however, the title "Member of the N.I.v.A." has acquired a significance in governmental and business circles in all parts of the Netherlands.

The Bylaws of the Netherlands Institute and of the Association of University Trained Accountants (V.A.G.A.) prohibit partnership with nonmembers. The reason

for this prohibition is that there is no guarantee of expert direction of professional work if one or more partners is unqualified. This position is unacceptable to consultants, who will probably set up separate partnerships to offer management services.[2]

In the rules on professional activities of the Netherlands Institute, extensive reference is made to the auditor's certificate; to the records which must be maintained of work performed by members or their assistants; to the use of foreign auditors' certificates; and to the "approving" certificate which is given in connection with annual accounts. This last-named certificate must refer to the balance sheet, profit and loss account, and the explanatory memorandum. It must confirm that the annual accounts have been prepared "in accordance with principles established by proper commercial practice, and must refer to the existence and valuation of assets and liabilities and the description of such items."

The Institute's code of ethics forbids members to act as promoters; insists on their being independent of clients; and emphasizes that they must not advertise for business or pay a commission to acquire an audit. Members are subject to the following penalties for infraction of the code: written reprimands, suspension for a year, and expulsion from membership. In addition, a fine may be imposed which is donated to a charitable institution of the council's choice.

The first practicing accountant in the Netherlands was E. van Dien, who began his career in Amsterdam in 1893. He attended the 1904 International Congress in St. Louis in an unofficial capacity. A member of the Institute, Th. Limperg, Jr., a professor in the University of Amsterdam from 1922 to 1950, did much to develop the concept that the accountant has a wider scope than that of confidential adviser to his clients. He evolved the theory that the auditor's work should be of such caliber as to warrant the confidence inspired by it. His report to the 1926 Congress formed the basis of this theory. Because of Limperg's efforts, the view was accepted that the auditor is also the confidential adviser to third parties. The development of Netherlands company law and the rise of the limited company strengthened his arguments regarding the function of the Netherlands public accountant.[3]

In the Netherlands, an auditor often gives his certificate by merely signing the accounts. This signature denotes that the practitioner assumes responsibility for the contents of these accounts. Some Dutch practitioners contend that they conduct a more detailed examination of the profit and loss account than normally is the practice overseas, in order to be able to give a "clean certificate." In the Netherlands, the auditor's certificate must cover both the balance sheet with explanatory notes and the profit and loss accounts. Since 1947, members of the Netherlands Institute have not been permitted to give a certificate on two consecutive balance sheets without giving their opinion, also, on the intervening profit and loss account. It is generally acknowledged in the Netherlands that auditors can be held responsible for the contents of their certificates to all interested parties, that is, not only shareholders but also creditors, bankers, and others.

Opinion differs in the Netherlands as to whether the public accountant is allowed to base his audit on the system of internal control or whether he has to perform a detailed audit, even if this internal system is well organized. Because cost accounting

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[2] See S. C. Bakkenist, "Business Organization and the Public Accountant," *Proceedings*, 1957 International Congress.

[3] See A. Th. de Lange, "Principles for the Accountant's Profession," *Proceedings*, 1957 International Congress.

does not exist in Holland as a separate profession, the education of accountants includes managerial accounting to a greater extent than in some other countries. This approach influences the drafting of the audit program. This program may cover a detailed audit but the trend today is that the auditor should base his examination on his client's internal organization, satisfying himself throughout the year as to the adequacy of the set-up of the organization and as to the observance of internal instructions. Consequently, he must, if necessary, criticize the structure of the client's organization.

In the Netherlands, the simple signature of the financial statements mentioned above, is regarded as the ideal certificate. In relation to qualifications, the Netherlands Institute has outlined the following strict rules:

Article 11

1. An approving certificate, either given in the form of the simple signature on a document, or with a fuller description of the approbation, is considered to contain a full approbation of the document referred to in the certificate, unless the contrary is stated specifically by making use of the words "with the qualification."
2. This qualification must be made in writing describing the objections in such a way that extent of the qualification is clear.
3. The description of the qualification must constitute part of the certificate.

Article 12

Members are forbidden to issue an approving certificate with a qualification, if this should render the tenor of the statement null and void, or should be derogatory to it in essence.

For a number of years the Netherlands Institute has sponsored the study of important research problems on an individual basis by means of annual "Year Days" and study meetings. This research was placed on a systematic basis in 1946, through the establishment of a central body, the Committee of Advice on Professional Matters, which has published the following reports:

- Comparative figures in annual accounts (1952).
- The relationship of members of the Netherlands Institute to foreign auditors in public practice (1954).
- Some aspects of the function of the internal auditor, more especially the question whether the internal auditor of a parent company can certify the annual accounts of a subsidiary company (1954).
- The relationship between the auditor and the actuary in insurance companies and its influence on the auditor's certificate (1954).
- The relation of the public accountant to members of other professions.
- The problem of tax arrears in relation to annual accounts.
- The problems of the accountancy profession arising from economic regulations laid down by the Government.

Another committee recently has been set up to deal with administrative organization. It is studying such matters as the relation of the internal audit to the company's administrative organization; the controller's function and its importance to management; internal administrative recording; comparison of enterprises; and costs for administrative work.

The Netherlands Institute has been endeavoring to secure statutory regulation of the profession, provided that its own position is maintained and that there is assurance of favorable circumstances for further development. The State Secretary of Economic Affairs appointed a committee to explore the question whether statutory regulation was desirable; a report has been rendered on this subject very recently but, to date, no final decision has been reached by the government.

A speaker at the fortieth anniversary of the Netherlands Institute (1935) pointed out that during its existence the Institute had "undoubtedly made a material contribution to the excellent reputation for soundness and reliability which Netherlands industrial life enjoys universally."

At the sixtieth anniversary, another commentator stressed a different theme: "The level of management of Netherlands industrial life has materially contributed to the creation of a sound, well-qualified accountants' profession; this level may even have been a determining factor."

BELGIUM

From 1831, Belgian bookkeeping experts with the title of "Experts-Comptables" were entrusted by the legal courts with the investigation of merchants' books in case of litigation. In 1903, the first accounting association in Belgium was formed, Chambre Syndicate des Experts-Comptables. Although it was an independent body, the Chambre functioned under the direction of the Brussels Chamber of Commerce. As with some other continental societies, its members were divided into two classes: First, *experts-comptables* who had at least ten years of professional experience; and second, *comptables* of the rank and file. Elections to membership were held in general meetings of the Chambre, after a committee had inquired into the professional competency and character of the candidates. After 1903, numerous local associations of accountants were formed.

When the College Nationale (the National Board of Accountants in Belgium) was founded on May 25, 1950, it proposed to supervise the vocational training of accountants by requiring all necessary guarantees in connection with ability and professional honesty; to support and extend the professional practice of its members, and to promote their professional interests; to encourage and extend all that is suitable to promote accounting knowledge and its applications; and to obtain official incorporation. The structure of this National Board is such that, at least temporarily, the existing organization remains intact; it is, thus, in a certain sense, of a federated nature. The various local organizations are members of the Board if they accept as members those persons who are also accepted as members of the Board.

A major integration of the accounting profession took place in Belgium in December, 1957, when thirteen mainly regional bodies, affiliated to the *College Nationale*, combined to form the Association Nationale des Comptables de Belgique (A.N.C.B.). As a result of this merger, the majority of Belgian accountants, whether in practice or in industry, were brought together in the new association.

On the other hand, a Belgian accountant may become a member of the National Board only when he applies at the same time as one of the affiliated members. As a consequence of these regulations, uniformity has been achieved in the requirements of entry into the profession. The National Board has, in addition to the "joined members," two other types of members, that is, "effective" and "adopted" members (*membres effectifs et membres agrees*). The difference in the membership is that only those individuals who practice their profession may become "effective members." For the remainder, the requirements are the same, that is, a thirty-year minimum age; a certain period of probation; and the passage of several examinations. Upon their association, members must take an oath given by the president of the board, as follows: "I swear in conscience to fulfill faithfully all tasks which will be entrusted to me in my capacity of accountant."

In the board's articles of association, several provisions have been included which are also found in the rules of the accounting body in the Netherlands such as:

Restrictions: The members may not exercise such occupations which are of a nature to encroach upon the dignity or the incorruptibility of the profession.

Tasks to be entrusted to members: Administrative organization; the framing, reorganization or control of all accounts; and justifications of a fiscal nature.

Responsibility: Members are responsible for all errors committed in the fulfillment of their work.

Form of professional practice: The profession may not be carried out in the form of a company.

Professional secrets: Except for cases in which they must testify, members are not permitted to reveal facts they learned through their professional occupation.

Professional discipline: There are four Chambers of Discipline, the president of which is a magistrate. In addition, there is a Board of Appeal. The punishments which may be adjudged are a warning, blame, and a maximum suspension of one year. As to the cancellation of a member, this has to be decided by the general assembly of the Chamber of Discipline.

One of the first moves of the National Board was the establishment of the Commission Nationale de Defense de las Profession d'Expert-Comptable (National Commission for the Defense of the Accounting Profession). In one of its publications the Commission summarizes its activities, as follows:

1. Periodic or incidental control activities, either as a confidant of shareholders, or upon the request of management or other interested parties, such as, associates, heirs, moneylenders, bankers, companies, etc.
2. Advice in his capacity of expert upon request of the law, the authorities or other interested parties.
3. Periodic or incidental judgment regarding the state of affairs of companies.
4. Examination of the organization of enterprises.
5. Establishment of administrative organizations.
6. Examination of annual accounts.
7. Examination and preparation of cost-price calculations.
8. Advice relative to the administration of enterprises.
9. Advice at the time of formation of companies.
10. Liquidation of companies.
11. Assistance to curators in bankruptcies, notaries in heritages and judicial separation, and lawyers in dispute.
12. Assistance to lawyers.
13. Arbitrage, with or without legal mandate.
14. Assistance in the management of enterprises.
15. Assistance to management relative to commercial law, taxes, social legislations and other regulations emanating from the authorities.
16. Advice relative to the transfer and combination of companies.
17. Preparation of lectures.
18. Preparation of articles and books of a professional nature.

RESEARCH PUBLICATIONS SPONSORED BY THE AMERICAN ACCOUNTING ASSOCIATION

ONE of the objectives of the American Accounting Association is to encourage and sponsor research in accounting and to publish or aid in the publication of the results of research. The Association seeks to accomplish this objective in several ways, including the publication of research and scholarly articles in THE ACCOUNTING REVIEW, in the work of various Association committees concerned with research, and in the publication of monographs and studies.

While most of the members of the Association realize that the Editor of THE ACCOUNTING REVIEW always welcomes scholarly articles of high caliber, there is some reason to believe that many members are not aware of the fact that the Association stands ready to assist in the publication of research studies and monographs whose nature or length might make them inappropriate for inclusion in the REVIEW. Publication of monographs is financed through the "Life Membership Fund" of the Association.

Manuscripts are invited. Authors may be assured that their contributions will receive careful examination by appropriate officers and committees of the Association. Manuscripts or inquiries can be directed to the Director of Research of the Association.

REPORT OF THE ANNUAL CONVENTION

R. CARSON COX
Secretary-Treasurer

THE 1959 annual meeting of the American Accounting Association held on the beautiful campus of the University of Colorado afforded an ideal opportunity to combine an excellent vacation trip with the meeting of friends and members of the Association. It was held on August 24, 25, 26 in Boulder, Colorado, with the School of Business, University of Colorado, as host.

Special activities of the ladies' program included a luncheon followed by a lecture on "Ghost Towns of Colorado" on Tuesday and a tour of the U. S. Air Force Academy on Wednesday.

Activities of the children included a trip to Lookout Mountain, a tour of the Park of Red Rocks, and a tour of Magic Mountain.

The Association is greatly indebted to the Committee on Arrangements and the Ladies Program Committee for the excellent facilities and arrangements made for us. We would like to express our sincere appreciation to all the staff members of the School of Business Administration, University of Colorado, and especially to the committee members listed below:

Professor and Mrs. Robert S. Wasley
Professor Joseph Bachman
Professor and Mrs. Allen Brudos
Professor and Mrs. Chauncey Beagle
Professor and Mrs. Timothy Campbell
Professor and Mrs. Vinton Curry
Professor and Mrs. Howard Jensen
Professor Hazen Kendrick
Professor and Mrs. William Kruse

At the Plenary sessions on Tuesday and Wednesday morning, the following speakers discussed the topics indicated: Allan Cartter, Ford Foundation, New York, "Education for Business"; Lawrence M. Walsh, Haskins and Sells, New York, "Accounting Education from the Public Accountant's Standpoint"; Paul E. Fertig, Ohio State University, Columbus, Ohio, "Organization of the Accounting Program—Graduate and Undergraduate"; Lawrence L. Vance, University of California, Berkeley, California, "Statistical Methods in Accounting and Auditing"; Ronello B. Lewis, E. F. Hutton and Company, New York, "The Role of Accounting in Decision Making"; Louis W. Matusiak, American Institute of Certified Public Accountants, New York, "The Professional Development Program"; Russell Mathews, University of Adelaide, Adelaide, South Australia, "Inflation and Company Finance"; Edward T. McCormick, President, American Stock Exchange, New York, "Financial Reporting and the Stock Exchange."

The following subjects were discussed at the round tables held on Wednesday afternoon: "The Future of the Undergraduate Accounting Major," "Instruction in Management Services by Accountants," "Sampling in Auditing," "Methods of Teaching Accounting Systems," "Recent Doctoral Dissertations," "The Forward Look in Management Accounting," "Rate of Return on Capital Investment as a Measure of Management's Performance," "Content and Objective of the Principles Course," "Reinvestment Depreciation," "Internal Control and Its Significance in Auditing."

At the luncheon and business meeting on Wednesday, President Martin L. Black presiding, brief reports were given by the Editor regarding THE ACCOUNTING REVIEW, by the Secretary-Treasurer regard-

ing finances and membership statistics, and by the Director of Research, the Chairman of the Accounting Careers Committee, and the Chairman of the Membership Committee concerning the Association's activities in these areas.

The report of the Committee on Nominations (C. A. Moyer, S. Paul Garner, R. H. Hassler, Thomas W. Leland, C. Rollin Niswonger) was presented by Chairman Moyer.

For President:
Charles J. Gaa, Michigan State University
For President-Elect:
A. B. Carson, University of California at Los Angeles
For Vice Presidents:
Charles E. Johnson, University of Oregon
Walter Kell, Syracuse University
Hans Todt, Bristol Laboratories, Inc., Syracuse, New York
Glen Welsch, University of Texas
For Secretary-Treasurer
Carson Cox, Ohio State University
For Editor:
Robert K. Mautz, University of Illinois
For Director of Research:
Raymond Dein, University of Nebraska

A motion was made from the floor, seconded and carried accepting the report of the Committee on Nominations and instructing the Secretary-Treasurer to cast a unanimous ballot for election of the above named persons.

President Martin L. Black reviewed his activities during the year, summarized the work of the Association Committees, and explained the need for an increase in membership dues. Upon a motion and second from the floor, it was proposed that the annual dues of a member of the Association be increased from $5 to $6.50 effective January 1, 1960. This motion passed on a voice vote.

The report of the Committee on By-Laws (Rufus Wixon and Robert K. Mautz) was made by Mr. Wixon who proposed amendment of the by-laws with respect to life memberships as follows:

Section II of the by-laws now states, in part: "A life membership shall be available on the payment of $100." The Committee on By-Laws hereby moves that this portion of Section II be amended to read: "Effective January 1, 1960, a life membership shall be available on the payment of $125." The proposed amendment is recommended because of the increase in membership dues. This motion was seconded from the floor and passed on a voice vote.

At the banquet session on Wednesday evening President Black introduced the members of the Committee on Convention Arrangements, the Ladies' Program Committee, and the persons seated at the speaker's table, including President-Elect Charles J. Gaa, who made a brief acceptance speech.

A highlight of the banquet session was the presentation to Professor Emeritus Hiram T. Scovill of the Alpha Kappa Psi foundation award for meritorious service in the field of accountancy. The presentation was made by Professor Glenn G. Yankee, Regional Director of Alpha Kappa Psi.

President Black then introduced Professor Albert H. Nadeau who presented the paper on the following pages.

FLEXIBLE ENTITY ACCOUNTING*

RALPH CURRY, *Novelist*

GOOD evening, ladies and gentlemen. I am afraid tonight that I feel very much like the fish out of water—what he wanted to say was, "give me a drink." It is not my habit, I assure you, to attempt an air of authority before members of learned groups in the subject of their concentration—I, like you, am listening to this speech under duress.

I am a novelist and according to stereotype I ought to be content with cloistered walls, the hum of my typewriter, quiet conversations with men of letters, an occasional mistress, and an even more occasional royalty. But then, according to stereotype you ought to be content with a dingy office, an adding machine, and a never ending column of figures—no home, no social life, no friends, no sex; just a cold, cold office and columns and columns of figures. All this by way of explanation (or excuse, if you prefer)—I am here tonight because I drifted out of the stereotype and into a conversation with an accountant. I told him a story and he felt that it ought to be told to you. Perhaps, he felt you deserved it.

How an accountant comes up with the big, new idea I am not sure, but poets, playwrights, and novelists, more often than not, rely on the technique described by Emerson as "watchful waiting" wherein the writer does *nothing* but go ahead with the sundry non-professional details of his life until *something* triggers an idea. In the spirit of "watchful waiting" sometime back I happened in on a showing of "The Bridge on the River Kwai." Because an incident in that picture was close to home for you people (and, incidentally, must have rubbed against the grain), I am sure that those of you who saw the picture will remember the interview with the young chartered accountant to determine whether he was suited to participate in the very dangerous mission of blowing up the bridge. Asked to detail his work as an accountant in civilian life, the young man replied that his job was to add up columns of figures which he knew had been added before him and which he knew would be added again afterwards. It was a minor incident in the picture and an even more minor incident in my life, but it was sufficient to trigger an idea—and this along with a locale for my story suggested to me by a recent reading of Chaucer's "Canterbury Tales" resulted in my showing up in Canterbury, England a few weeks later—in May, 1958. Purpose, research; Subject, accounting in Canterbury; Prospect and motivation, a best selling novel.

I shall not bother you with what you already know of accounting in England, that which any one of you could have told me before I left the States because, of course, there exists no essential difference between their system and ours. Nor shall I bother you with the long, if interesting, tale of how I gained the confidence of Mr. Ralph Harrington of the phenomenally successful accounting firm of Harrington, Grouse, and Bixley. Suffice it to say that offhand remarks by a number of the persons I interviewed early in my search, left no question in my mind but that there were strange goings on in the house on Fleetmore Street. (You will, at this juncture I trust, pardon my slight excursion into the

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* This paper was presented at the banquet session of the annual meeting of the Association at the University of Colorado on August 26, 1959. (In real life, Ralph Curry is Albert H. Nadeau, Assistant Professor of English and Speech and Director of the University Theatre, University of Colorado.)

vernacular of Sherlock Holmes. Though my story is true on my honor as my name is Ralph Curry, there are moments when it reads beautifully as a detective story.)

I referred to the firm of Harrington, Grouse, and Bixley as "phenomenally successful." It is, in fact, so successful that in the past seven years prior to June 30, 1958 it had risen from 34th to 6th, according to volume of business, in the whole of England—and, to my knowledge, presently retains that rank. Their secret is the subject of my brief talk tonight . . . "flexible entity accounting," which finds precedent in the writings of an 18th Century theorist, whose description of a synthetic, equalization account labeled "refuse and dregs" is argued with plausibility, if also plagued with loopholes and pitfalls. The accounting system of Harrington, Grouse, and Bixley, which employs the concept of "refuse and dregs," by-passes virtually all double-checking, counter-checking, and re-checking procedures and interpolates or compensates for the errors thus allowed by means of a special, synthetic, flexible account which serves as a pool from which entries may be drawn, or to which entries may be committed, to correct disbalances which turn up on the balance sheets of the several companies participating in the pool. Thus, a given client's entity convention accounts, found to be out of balance, may either *contribute* an entry to "refuse and dregs" in the amount of its excessive debits or credits to achieve balance; or it may *draw* on "refuse and dregs" for an entry toward credits or debits, which ever (contributing to or drawing from) is deemed most suitable according to the condition of the pool.

Fundamentally, the "refuse and dregs" idea is based on the triple theory that: *1*) the *large error* is improbable—for two reasons: (a) a bookkeeper tends to become more careful as he moves to the left in the process of computation, and (b) the experienced bookkeeper, developing a sense of proportion in dealing with figures, will intuitively recognize a disbalance in the *significant* error—*2*) an employee, whatever his professed feeling, is in consort with the interests of an employer or client and the error of the employee, therefore, tends more often than not to favor the employer or client (a mistake in the addition of debits, for example, usually resulting in a greater debit than warranted, and a contrary result is more often than not experienced in the addition of credits—the whole resulting in a disbalance between credits and debits in the employer's or client's favor; thus the term, favorable disbalance),—and finally: *3*) The advent of an upsurge in bookkeeper prestige gained by his more independent and responsible position (since he no longer labours under a degrading system of check and counter-check) results in a correspondingly positive moral factor in dealing with his company as well as in dealing with the accounting firm—and, hence, an increased devotion to his work with a companion gain in accuracy. And the auditors from the accounting firm, freed from the tedious checking of accounts, and thereby spending more profitable hours in financial analysis, experience a similar uplift in spirit.

With men of imagination (and many said and some still say, no sense) at the helm, the firm of Harrington, Grouse, and Bixley researched the various aspects of the theory just explained and, finding it suitable to the bounds of reason, if not to the shackles of tradition, and being comforted by Loyds' of London who were willing to insure the big error up to 1,000,000 pounds, they embarked on their new era in accounting. Not without resistance from clients and stockholders, to be sure; but finally and surely, with gusto.

The major pitfall of the system, if the substantial number of improbables in-

herent to the concept may be considered less than major, is the dishonest bookkeeper. Fortunately for the firm of Harrington, Grouse, and Bixley, a dishonest bookkeeper was on the payroll of a client when the "refuse and dregs" system was initially adopted. I say "fortunately" because she was a very little bookkeeper with very little aspirations and very, very little nerve. Her resignation from the job less than ten weeks later was accompanied by the admission that she had purposefully made an error in the favor of a client because she felt that the prosperity of her employer would subsequently profit herself. The incident, of course, served to emphasize the danger from this front, and the firm, on the verge of returning to convention, took stock of its situation. They did not return to convention, however, since the apparent benefit of increased morale through a rise in mutual and personal respect had already become a precious commodity. Further, the firm of Harrington, Grouse, and Bixley had discovered a gratuitus benefit of their brain child system—contrary to the ageless assumption that stability, (usually projected through put-on dignity in the guise of arduous deliberation and excessive caution) was the focal point of client trust, the firm had found that the quick answer, allowable within the elastic bounds of "refuse and dregs," projected the affirmative qualities of confidence, ability, and interest, to replace the traditional more negative qualities. That the new found ability and confidence were based essentially on the blissfully unaware surety of childhood, the clients seemed to care not a whit. In passing, I might point out that ridiculous and unresponsible as this assumption may be, the current success and popularity of the Savings and Loan Association movement in this country, housed almost exclusively in anything but substantial Doric columned marble and granite buildings, must be attributed in large degree to the cutting of red tape, the quick answer, and the *show* of interest in the public good.

Rather, then, than to lose these positive advantages to a soaring volume of business, the firm headed by Mr. Harrington took no action against the very little criminal bookkeeper—they simply checked her books and hired a private agency whose duty it was and is to quietly keep track of the exemplary lives of bookkeepers. To this day in the mind of Mr. Ralph Harrington, the system runs in smooth and harmonious accord with rising profits each year. "Some day," he told me with the trace of a fiendish glint in his eye, "I'd really like to present my idea to the board."

THE TEACHERS' CLINIC

GLEN G. YANKEE

EDITOR'S NOTE: This section of THE ACCOUNTING REVIEW is devoted to matters of particular interest to accounting instructors. The contribution of articles bearing on the nature and purpose of various types of accounting education, or dealing with techniques of accounting instruction, is invited. Address all correspondence to Glen G. Yankee, School of Business Administration, Miami University, Oxford, Ohio.

ADMISSION OF A PARTNER—STEP BY STEP

KERMIT C. MOSS
Arkansas A. & M. College

The path leading to a degree with a major in accounting is a rugged one at best. Obstacles are to be encountered at every turn. Many an eager student has dashed confidently down this path only abruptly to encounter a sizeable obstacle known as partnership dissolution resulting from the admission of a new partner.

This obstacle can be eliminated, or at least smoothed considerably, by a step-by-step presentation of the material, with accompanying illustrations. One teaching technique is to (1) lead the student through the brambles, (2) then tell him *where* he has been, and (3) still later tell him *why* he made the trip. The material which follows is limited to step one of this technique.

Admission of a Partner by Investment in the Partnership

Bonus Method

Step 1. Find sum of old partners' capital accounts plus contribution of new partner.
Step 2. To obtain the amount to be credited to the capital account of the new partner, multiply the amount found in step 1 by the fractional interest to be received by the new partner.
Step 3. To obtain the amount to be added to or subtracted from the old partners' capital accounts, find the difference between the amount obtained in step 2 and the amount contributed by the new partner.
Step 4. *Route "A"*

If in step 3 it is found that the amount contributed by the new partner exceeds his capital credit as determined in step 2, the difference is credited to the old partners' capital accounts in accordance with the old profit and loss agreeemnt.

Route "B"

If in step 3 it is found that the amount contributed by the new partner is less than his capital credit, as found in step 2, the difference is debited to the old partners' capital accounts in accordance with the old profit and loss ratio.

Illustration 1—Requiring Route "A"

Howard and Mack are partners with capital balances of $21,000.00 and $12,000.00 respectively. They share profits and losses in the ratio of 2 to 1. Doss invests $15,000.00 in cash, receiving a one-fourth interest.

Solution

Step 1. $21,000.00+$12,000.00+$15,000.00=$48,000.00.
Step 2. $48,000.00×¼=$12,000.00, amount to be credited to Doss.
Step 3. $15,000.00−$12,000.00=$3,000.00, amount to be added to old partners' capital accounts, in profit and loss ratio.
Step 4. Entry:

Cash	$15,000.00	
Doss, Capital		$12,000.00
Howard, Capital		2,000.00
Mack, Capital		1,000.00

Illustration 2—Requiring Route "B"

Mettetal and Swift are partners with capital balances of $40,000.00 and $25,000.00 respectively. They share profits in the ratio of 3 to 2. Hamm invests $10,000.00 in cash, receiving a one-fifth interest.

Solution

Step 1. $40,000.00+$25,000.00+$10,000.00=$75,000.00.
Step 2. $75,000.00×⅕=$15,000.00, amount to be credited to Hamm.
Step 3. $15,000.00−$10,000.00=$5,000.00, amount to be subtracted from old partners' capital accounts, in profit and loss ratio.
Step 4. Entry:

Cash	$10,000.00	
Mettetal, Capital	3,000.00	
Swift, Capital	2,000.00	
Hamm, Capital		$15,000.00

Goodwill Method

Step 1. Divide sum of capital accounts of old partners by numerator of fraction representing fractional interest of partnership to be retained by old partners.
Step 2. Multiply amount found in step 1 by the numerator of the fraction representing the interest to be received by the new partner.
Step 3. Find the difference between the amount obtained in step 2 and the amount to be contributed by the new partner.
Step 4. *Route "A"*
If the amount contributed exceeds the amount found in step 2:
Step 4-A-1. To find the total worth of the enterprise, divide the amount to be contributed by the new partner by the fractional interest to be received by him.
Step 4-A-2. From the amount found in step 4-A-1, subtract the sum of the old partners' capital accounts plus the contribution of the new partner. The difference is the goodwill.
Step 4-A-3. Debit goodwill for amount found in step 4-A-2, and credit old partners' capital accounts according to their old profit and loss agreement. Debit cash and credit new partner's capital account for the amount contributed.
Route "B"
If the amount contributed by the new partner is less than the amount found in step 2:
Step 4-B-1. Find the difference between the amount found in step 2 and the amount contributed by the new partner. This is the goodwill.
Step 4-B-2. Debit goodwill and accounts for cash and property contributed and credit new partner's capital account.

Illustration 3—Requiring Route "A"

Thompson and Reaves are partners with capital balances of $40,000.00 and $20,000.00 respectively. They share profits in the ratio of 3 to 2. Teeter invests $44,000.00 in cash, receiving a two-fifths interest.

Solution

Step 1. $\dfrac{\$40,000.00+\$20,000.00}{3}=\$20,000.00.$
Step 2. $20,000.00×2=$40,000.00.
Step 3. Amount contributed exceeds amount found in step 2, indicating that Route "A" should be taken.
Step 4-A-1. $\dfrac{\$44,000.00}{\frac{2}{5}}=\$110,000.00$, total worth of new enterprise.
Step 4-A-2. $110,00.00−($40,000.00+$20,000.00+$44,000.00)=$6,000.00, amount of goodwill.
Step 4-A-3. Entry to record goodwill:

Goodwill	$6,000.00	
Thompson, Capital		$4,000.00
Reaves, Capital		2,000.00

Entry to record Teeter's contribution:

Cash	$44,000.00	
Teeter, Capital		$44,000.00

Illustration 4—Requiring Route "B"

Thompson and Reaves are partners with capital balances of $30,000.00 and $15,000.00 respectively. They share profits in ratio of 2 to 1. Teeter invests $24,000.00 for a three-eighths interest.

Solution

Step 1. $\dfrac{\$45,000.00}{5} = \$9,000.00.$

Step 2. $9,000.00×3=$27,000.00.

Step 3. Amount contributed is less than amount found in step 2, indicating that Route "B" should be taken.

Step 4-B-1. $27,000.00−$24,000.00=$3,000.00, amount of goodwill.

Step 4-B-2. Entry to record goodwill:

Goodwill	$3,000.00	
Teeter, Capital		$3,000.00

Entry to record Teeter's contribution:

Cash	$24,000.00	
Teeter, Capital		$24,000.00

CURRENT STATUS OF MANAGERIAL ACCOUNTING AS A COURSE OF STUDY

E. Kennedy Cobb
Los Angeles State College

Managerial Accounting as a course of study represents a recent addition to the accounting curriculum of many schools of higher education. The addition of this course reflects the current demand for an approach to accounting that emphasizes the utilization of accounting data for management planning and control.

At the present time many accounting departments are in the process of re-evaluating their entire accounting curriculum to determine to what extent present offerings may continue to serve their traditional purpose as well as fulfill the need for an approach which takes into greater consideration the managerial aspect. Needless to say, this presents a problem. Many individuals tend to be adverse to change, but if accounting departments are to respond to present day needs, a critical appraisal of accounting offerings must be made and the necessary changes effected to bring the curriculum in line with current demands.

It is probably safe to state that the nature of the course in Managerial Accounting varies with individual schools and instructors. This is to be expected since the term "Managerial Accounting" can at best be described in a general sense. The American Accounting Association's Committee on Management Accounting defines Management Accounting in its 1958 report as follows:

> "Management Accounting is the application of appropriate techniques and concepts in processing the historical and projected economic data of an entity to assist management in establishing a plan for reasonable economic objectives and in the making of rational decisions with a view toward achieving these objectives."[1]

As far as the accounting major is concerned, a certain degree of emphasis on the managerial approach is obtained as he progresses through the required courses in accounting. Courses in Internal Auditing and Budgeting, for example, have been added to many accounting curricula.

[1] "Report of Committee on Management Accounting," The Accounting Review, April, 1959, p. 210.

Current texts in Cost Accounting stress the use of cost accounting as a managerial tool.

It is in the area of the non-accounting major that a great weakness has existed in respect to the use of accounting data for management purposes. Until rather recently, the non-major terminated his accounting study after a two or three-term course in Principles of Accounting. More and more, this pattern is being changed to include a course in Managerial Accounting.

There are some who might argue that a separate course in Managerial Accounting is unnecessary. Instead, all that is necessary is a re-orientation of the Principles course. This article is not intended to argue the merits or weaknesses of either approach particularly as far as Managerial Accounting applies to the non-accounting major. The important point is that each approach attempts to offer the non-major an accounting curriculum which will meet his requirements.

Questionnaire circulated regarding Managerial Accounting

In an effort to determine the current status of Managerial Accounting as a course of study, a questionnaire was circulated in May, 1959. The questionnaire was sent to the heads of the accounting departments of ninety-seven four-year colleges and universities. Selection of the schools was made on the basis of the adoption list furnished by the publishers of two of the most widely used Managerial Accounting texts. Consequently, no inference can be drawn from the result of the questionnaires in respect to the relative number of accounting departments over the country offering a specific course in Managerial Accounting.

Replies were received from sixty-four accounting departments. Regarding the over-all offerings in Managerial Accounting, the result was as follows:

Offered on the under-graduate level only	21
Offered on both the undergraduate level and graduate level	13
Total respondents offering Managerial Accounting on the under-graduate level	34
Offered on the graduate level only	14
No course in Managerial Accounting	16
Total respondents	64

Status of Managerial Accounting as an under-graduate course based on thirty-four respondents

Most of the questions dealt with the Managerial Accounting course as an undergraduate offering. The following represents the information obtained from the thirty-four respondents offering Managerial Accounting on the under-graduate level.

Managerial Accounting, as a separate course of study, has developed for the most part since 1955 as evidenced by the following result of the inquiry regarding the year in which Managerial Accounting was first taught as an under-graduate course:

1958	3
1957	6
1956	8
1955	4
1954	1
1952	2
1950	1
Before 1950	5
No answer	4
Total	34

For the most part Managerial Accounting on the under-graduate level appears to be a required course. The status of the course in this respect is as follows:

Required of	
Non-accounting majors only	13
Both accounting and non-accounting	11
Accounting majors only	1
Industrial engineering majors only	1
	26
Not required—elective	8
Total	34

Of the eleven departments requiring the course of both accounting and non-ac-

counting majors, the same course was taken by both groups with only one exception. In the latter instance, the accounting majors were required to take a senior-level Managerial Accounting course. In all schools the Managerial Accounting course represented the terminal accounting course for non-accounting majors.

Of the eight schools offering Managerial Accounting as an elective, only three permitted accounting majors to elect the course for credit.

It does not appear that Managerial Accounting has evolved as a first-term course in accounting. Of the thirty-four respondents offering the course on the undergraduate level, thirty indicated that a prerequisite course in accounting was required for Managerial Accounting. The four departments not requiring a prerequisite for Managerial Accounting offer the course as a two-term introductory course. The basic nature of the prerequisite accounting course is as follows:

Number of credits received for prerequisite course:

Semester credits:		
Eight	2	
Six	17	
Three	1	
No answer	4	24
Quarter credits		
Ten	2	
Nine	2	
Eight	1	
Seven	1	6
Total		30

Prerequisite course titles:

Principles of Accounting	10
Introductory Accounting	9
Elementary Accounting	7
Others	4
Total	30

From the above, it appears that for the most part Managerial Accounting is being offered as a separate third-term course preceded by an introductory two-term course. The conclusion can be drawn that in most cases Managerial Accounting does not represent a re-orientated introductory course.

None of the thirty-four departments requires Intermediate Accounting of non-accounting majors. Of those departments that required Intermediate Accounting of non-accounting majors before the addition of Managerial Accounting, the requirement was removed with the addition of Managerial Accounting. This is indicated by the following answer to the question "Was Managerial Accounting first offered to non-accounting majors as a substitution for a previously required course in Intermediate Accounting?":

Yes	11
No	23
Total	34

It appears, therefore, that Managerial Accounting as it applies to the non-accounting major has evolved as a substitution for Intermediate Accounting or as an additional accounting course succeeding a required introductory course.

Accounting department heads were asked to comment on their Managerial Accounting course in respect to several specific areas. The response was most gratifying in that there was some comment on each of the questionnaires in regard to at least one of the areas covered by the question. An effort was made to capture the general tone of the comments made and the following categories represent generally the basic ideas that were expressed:

(a) extent to which Managerial Accounting has served its purpose.

Very well	6
Fairly well	6
Satisfactory	1
Serving its purpose	4
Too early to tell	6
Beginning to question its effectiveness	1
No comment	10
Total	34

(b) suitability of text books available for use in the course.

Generally suitable	10
Generally unsuitable	13
No comment	11
Total	34

(c) future plans for continuation of the course.

Plan to continue indefinitely	18
At least two more years	1
Probably	1
Do not know	1
No comment	13
Total	34

It will be observed that only six respondents indicated, without reservation, that the course was serving its purpose. The strongest advocate in this group stated: "It is a useful, comprehensive course which utilizes the tools of accounting from the management point of view. We are quite satisfied with it." The exact opposite to this opinion was the comment: "We are not satisfied that it serves as a good terminal course for non-majors and we are beginning to question its effectiveness for our majors. The transition from the principles approach bothers us." Thus, somewhere between these two extremes lies the majority of attitudes concerning the effectiveness of the course.

Comments pertaining to the suitability of text books for the Managerial Accounting course probably offer the clue to why some express less than overwhelming approval of the course. At the present time there are several texts on the market. Each of these texts devotes a relatively large portion of the material to elementary accounting principles. The reason for this is undoubtedly an effort to provide a text that can be used for a re-orientated introductory course in accounting or for a separate Managerial Accounting course preceded by the traditional introductory course.

In only four cases out of thirty-four respondents was Managerial Accounting offered as a first-term accounting course; in all others the course is preceded by an introductory course. Therefore, it would appear that there is an obvious need for a Managerial Accounting text devoted entirely to the use of accounting data as a managerial tool since in most cases basic accounting principles would have been covered in a prerequisite course to the Managerial Accounting course.

Despite some misgivings in respect to the effectiveness of the course and the suitability of text books, comments regarding the future plans for continuation of the course clearly indicate that in most cases the course in Managerial Accounting has become a permanent part of many accounting curricula. Of the twenty-one comments pertaining to the continuation of Managerial Accounting, eighteen stated without reservation that the course will be continued indefinitely.

The sixteen respondents who are not presently offering a course in Managerial Accounting commented on future plans for the addition of a course in Managerial Accounting as follows:

Considering a course	2
Do not anticipate such a course	5
No immediate plans	2
Need has been recognized	1
No comment	6
Total	16

Conclusion

Based on the information obtained from thirty-four respondents offering an undergraduate course of study in Managerial Accounting, it appears that a pattern is developing. The general pattern is that of a one-term Managerial Accounting course preceded by a basic introductory accounting course offered over a two-term period. In all instances, the Managerial Accounting course is required of or may be elected by the non-accounting major. In about one-half of the responding schools the

course is required of or may be elected by the accounting major.

The non-accounting major terminates his study of accounting with the Managerial Accounting course. The accounting major, almost without exception, takes the same Managerial Accounting course as the non-major which means that he takes the course between Introductory Accounting and Intermediate Accounting.

There seems to be little doubt that Managerial Accounting will continue as a separate course of study in many schools of higher education.

One major criticism of the apparent current status of the course as it applies to the under-graduate accounting major seems to be in order. It would appear that from the viewpoint of the accounting major, Managerial Accounting as a course of study would be more effective as a terminal accounting course. The accounting major is in a much better position to appreciate and understand the use and application of accounting data as a managerial tool after he has terminated the traditionally required accounting courses. In only one school of the thirty-four responding was the accounting major offered a Managerial Accounting course in his senior year.

It might be suggested that the need for a Managerial Accounting course *per se* for the accounting major probably is not as acute as the need for such a course for the non-major. In all accounting courses, particularly upper-division courses, the managerial aspects of accounting can and should be emphasized, thus eliminating the necessity for a separate course.

Undoubtedly, the future will see a greater tendency on the part of accounting departments to provide courses or reorientate current offerings for the purpose of stressing the utilization of accounting data for managerial planning and control.

APPROPRIATION-EXPENDITURE ACCOUNTING

EDWARD S. LYNN
The University of Wisconsin

The differences in accounting procedures required by differences in legal requirements relating to the lapsing of appropriations are difficult for students of governmental accounting to understand. An exposition that (1) emphasizes the differences in the legal requirements themselves and (2) shows in easily compared fashion the accounting results of the differences has proved helpful to the author in explaining the principles involved and the accounting results of the principles.

Legal Assumptions

The following legal assumptions are illustrated in the accompanying Exhibit:

Assumption A. Encumbered appropriations do not lapse; the closing entry should leave on the books the Reserve for Encumbrances account which becomes the authorization for the purchase of the encumbered article in the year or years following the year of appropriation.

Assumption B. Unexpended appropriations lapse; the closing entry should close everything pertaining to the appropriation. If an encumbered article is to be purchased in the year or years following the year of appropriation, the appropriation for the year in which it is purchased must contain authority for the expenditure.

Assumption C. Encumbered appropriations do not lapse;[1] the closing entry should leave the

[1] The difference between the accounting under Assumptions A and C may be due to specific legal requirements or to decision of legal counsel or administrators as to the meaning or implementation of a specific provision.

Appropriation, Encumbrances, and Reserve for Encumbrances accounts on the books in the amount encumbered. Expenditures made in a subsequent year or years will be identified with the appropriations which authorized them.

These are not the only legal provisions which may be found, but the accounting for these three will serve as a basis for any variations required by other provisions. An example of one such variation from the above patterns is presented as the last section of this exposition.

The Exhibit

The accompanying Exhibit is based upon the following information for a governmental unit:

Accounts in pre-closing trial balance, December 31, 1957:

Debits	
Appropriation Expenditures, 1957	$240,000
Encumbrances, 1957	12,000
Credits:	
Reserve for Encumbrances, 1957	12,000
Appropriations, 1957	255,000

Exhibit

SUMMARY OF APPROPRIATION—EXPENDITURE ACCOUNTING

Under Three Assumptions as to the Lapsing of Appropriations

	Assumption					
	A		*B*		*C*	
	Dr.	*Cr.*	*Dr.*	*Cr.*	*Dr.*	*Cr.*
December 31, 1957:						
Appropriations, 1957	$255,000		$255,000		$243,000	
Reserve for Encumbrances, 1957	-0-		12,000		-0-	
Appropriation Expenditures, 1957		$240,000		$240,000		$240,000
Encumbrances, 1957		12,000		12,000		-0-
Unappropriated Surplus		3,000		15,000		3,000
To record the closing of the appropriation-expenditures accounts.						
January 1, 1958:						
Unappropriated Surplus	265,000		277,000		265,000	
Appropriations, 1958		265,000		277,000		265,000
To record the budget for the second year.						
Encumbrances, 1958			12,000			
Reserve for Encumbrances, 1958				12,000		
To record as encumbrances of the second year the orders placed but not filled in the first year.						
Transactions 1958:						
Encumbrances, 1958	$135,000		$135,000		$135,000	
Reserve for Encumbrances, 1958		$135,000		$135,000		$135,000
To record reduction of Appropriations by amount of estimated cost of purchase orders placed.						
Reserve for Encumbrances, 1958	125,000		137,000		125,000	
Encumbrances, 1958		125,000		137,000		125,000
To reverse the entry encumbering Appropriations for items received.						
Appropriation Expenditures, 1958	250,000		261,500		250,000	
Vouchers Payable		250,000		261,500		250,000
To record expenditures and the resulting liability.						
Expenditures Chargeable Against Reserve for Encumbrances, 1957	11,500(A)					
Vouchers Payable		11,500				
To record expenditures and the resulting liability.						
Reserve for Encumbrances, 1957					12,000	
Encumbrances, 1957						12,000

	Assumption					
	A		*B*		*C*	
	Dr.	*Cr.*	*Dr.*	*Cr.*	*Dr.*	*Cr.*
To reverse the entry recording all unfilled orders placed in 1957.						
Appropriation Expenditures, 1957..					11,500(A)	
Vouchers Payable..............						11,500
To record expenditures and the resulting liability.						
December 31, 1958:						
Appropriations, 1958..............	$265,000		$277,000		$255,000	
Reserve for Encumbrances, 1958...	-0-		10,000		-0-	
Appropriation Expenditures, 1958		$250,000		$261,500		$250,000
Encumbrances, 1958............		10,000		10,000		-0-
Unappropriated Surplus.........		5,000		15,500		5,000
To close appropriations, expenditures and encumbrances, of 1958.						
Reserve for Encumbrances, 1957....	12,000					
Expenditures Chargeable to Reserve for Encumbrances, 1957..		11,500				
Unappropriated Surplus.........		500				
To close accounts relating to orders first placed in 1957.						
Appropriations, 1957..............					12,000	
Appropriation Expenditures, 1957						11,500
Unappropriated Surplus.........						500
To close accounts relating to orders first placed in 1957.						

Note to Exhibit: The procedure of dating the accounts has been followed to emphasize the sources of authority to spend. If the accounts are not dated, under Assumption A an entry must be made on January 1, 1958, to convert the Reserve for Encumbrances to Reserve for Encumbrances of Prior Years. Similarly, in succeeding entries the account Expenditures Chargeable Against Reserve for Encumbrances of Prior Years will be used instead of Expenditures Chargeable Against the Reserve for Encumbrances, 1957.

(A) The invoiced amount for orders placed in 1957. Under assumption B this $11,500 becomes identified with expenditures of 1958.

A Variation from the Basic Assumptions

In some cases the law requires that a Reserve for Encumbrances account be left on the books at the end of the year but does not permit the Reserve to serve as authorization for purchases to be made in the subsequent year. In these cases no expenditure may be made unless there is a current appropriation authorizing it. Such requirements are satisfied by a closing entry of the type illustrated in the Exhibit under Assumption A and by the operating entries for Assumption B. But the opening entry is different from that illustrated for any of the assumptions. For example, assume that Wisconsin City had, at the end of 1957, outstanding orders of $20,000 and that the Reserve for Encumbrances was left on the books as in Assumption A. If the legislative body on January 1, 1958 authorizes the expenditure of $20,000 for those orders in 1958, the three entries[3] to record the authorization are as follows:

Reserve for Encumbrances, 1957..	$20,000	
Unappropriated Surplus................		$20,000
To transfer the surplus reserve to surplus		
Unappropriated Surplus........	$20,000	
Appropriations, 1958....................		$20,000
To record the supplementary appropriations.		
Encumbrances, 1958...........	$20,000	
Reserve for Encumbrances, 1958.........		$20,000
To record the orders placed in 1957 as 1958 encumbrances.		

[3] The three entries may be condensed into one, a debit to Encumbrances for $20,000 and a credit to Appropriations for the same amount, if the accounts relating to appropriations and expenditures are not dated. In the three entries, offsetting amounts are debited and credited to Unappropriated Surplus and to the (undated) Reserve for Encumbrances account.

Thereafter, the transactions for 1958 are recorded as if Assumption B were in use. For example, when the goods are received the following entries are made:

Reserve for Encumbrances, 1958	$20,000	
Encumbrances, 1958		$20,000
To cancel encumbrances.		
Appropriations Expenditures, 1958	19,500	
Vouchers Payable		19,500
To record actual expenditures.		

TAX BASIS OF PARTNER'S INTEREST EXPLAINED BY DOUBLE ENTRY

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Federal income tax rules pertaining to the basic computation of a partner's interest in the partnership are highly technical, and their application is difficult to teach. It is in this area that journal and ledger entries can be used in the classroom to great advantage. Even though the hypothetical entries illustrating the tax aspects are radically different from the entries which are required under accepted accounting procedure, a comparison of the results under both methods can give the student a clearer picture of the tax principle involved. For this purpose two sets of ledger records should be drawn on the blackboard, one to show the accounting aspects and the other the tax consequences of a variety of situations which may arise. To illustrate the procedure, a series of selected transactions are presented here in general journal form.

If a partner acquires his interest in the partnership through contribution of property, the basis of his interest will be the sum total of his bases in the properties contributed by him, and the properties contributed will have the same basis for the partnership (IRC 722, 723, Reg. 1.722-1, 1.723-1). Assuming that A contributes $10,000 cash, and B contributes $4,000 cash and property worth $6,000, but with a tax basis to B of $3,500, the entry showing the tax consequences would be:

Dr. Cash	14,000	
Dr. Basis of Machinery	3,500	
Cr. Basis of A's Interest		10,000
Cr. Basis of B's Interest		7,500

By contrast, the entry for general accounting purposes is:

Dr. Cash	14,000	
Dr. Machinery	6,000	
Cr. A, Capital		10,000
Cr. B, Capital		10,000

This application of the fundamental principle of basis carry-over from partner to partnership is fairly simple. A little more difficult to see is the effect of partnership liabilities upon a partner's interest basis. While for general accounting purposes capital account balances present net equities after deducting liabilities, the tax basis of a partner's interest is his gross equity in the bases of partnership assets only. Liabilities are accounted for separately. Any assumption of liabilities by an incoming partner is treated as a cash contribution to the extent of the liability assumed by him, increasing his basis by that amount (IRC 722 a, Reg. 1.752-1 a). The accounting equation—asset balances equal liability balances plus capital balances—becomes then: asset bases equal bases of partners' interests.

To illustrate, let us assume that A contributes $10,000 cash; B contributes $4,000 cash and real estate in which B had an equity worth $6,000 as follows: market value of property $15,000, mortgage liability $9,000. Assume further that B's tax basis of the property is $12,000, i.e. $3,000 less than its market value on the

date of contribution. The general accounting entry is:

Dr. Cash	14,000	
Dr. Real Estate	15,000	
Cr. Mortgage Payable		9,000
Cr. A, Capital		10,000
Cr. B, Capital		10,000

For tax purposes, on the other hand, one half of the $9,000 mortgage liability would be added to A's and deducted from B's interest basis, to show A's assumption of joint liability with B. The following entry will show the tax aspects involved:

Dr. Cash	14,000	
Dr. Basis of Real Estate	12,000	
Cr. Basis of A's Interest ($10,000 cash plus $4,500 mortgage assumed)		14,500
Cr. Basis of B's Interest ($4,000 cash plus $12,000 real estate less $4,500 mortgage assumed by A)		11,500

If A contributed a business consisting of assets valued at $50,000 with a tax basis of $40,000, business liabilities amounted to $8,000, and B contributed $42,000 cash and agreed to assume joint liability for A's business debts, the tax consequences would be shown as follows:

Dr. Cash	42,000	
Dr. Basis of Assets	50,000	
Cr. Basis of A's Interest ($40,000 property basis less $4,000 liabilities assumed by B)		36,000
Cr. Basis of B's Interest ($42,000 cash plus $4,000 liabilities assumed)		46,000

Had B not assumed such liability, the tax entry would be:

Dr. Cash	42,000	
Dr. Basis of Assets	40,000	
Cr. Basis of A's Interest		40,000
Cr. Basis of B's Interest		42,000

For general accounting purposes, the entry in either case is:

Dr. Cash	42,000	
Dr. Assets	50,000	
Cr. Liabilities		8,000
Cr. A, Capital		42,000
Cr. B, Capital		42,000

Services contributed by a partner are added to the partner's interest basis at their market value and are fully taxable to the contributing partner (Reg. 1.721-1 b). Therefore, no difference between accounting and tax treatment arises in this instance. The value of the services is charged to expense and credited to the partner's capital or interest basis.

Adjustment to basis for gains, losses, or distributions are recorded in the same manner for tax as for general accounting purposes, except that distributions of property are charged to the partner's interest basis and credited to the basis of the property at an amount representing the basis of the property to the partnership. If the basis of the property distributed exceeds the basis of the receiving partner's interest, no loss is recognized to the partnership, and the partner's basis in the property will be reduced to the basis of his interest at the time of distributions (Reg. 1.732-1, a). So, if B, with an interest basis of $10,000, receives a distribution of property with a partnership basis of $12,000, the entry for tax purposes is:

Dr. Basis of B's Interest	10,000	
Dr. Non-Deductible Loss	2,000	
Cr. Basis of Property		12,000

The entry to show B's own tax situation after the distribution is:

Dr. Basis of Property	10,000	
Cr. Basis of Investment in Partnership		10,000

From the foregoing illustrations it can be seen that an accounting equality of asset bases and capital interest bases is maintained whenever all partners acquire their interests by contributions to the partnership. In the case of transfer of an interest through purchase or death, however, the basis to the transferee is cost, or market value at time of death, respectively (IRC 742, Reg. 1.742-1). But even in such a case double entry will give a clearer picture of the tax accounting aspects of the situation and will also provide a better understanding of the elective method provided in IRC 743 b 1, Reg. 1.743 b 1. Under this method a partnership adjusts the basis of partnership property to balance with the interest

basis of the transferee partner. The illustration which follows shows the use of double entry in such a situation.

The AB partnership presents the following asset, liability and capital balances. It is assumed that the book values shown for the assets are also their bases for tax purposes.

	Book Value	*Market Value*
Cash	$20,000	$20,000
Property X	20,000	25,000
Property Y	10,000	15,000
	$50,000	$60,000

	Book Value	*Market Value*
Liabilities	$10,000	$10,000
A, Capital	20,000	25,000
B, Capital	20,000	25,000
	$50,000	$60,000

It should be noted that, since the liabilities are not deducted in arriving at the partners' interest bases, the bases of A's and B's interest in the partnership are each $5,000 higher than their capital balances, i.e. $25,000 each.

B sells his interest to C at its market value, $25,000, receiving that amount of cash in payment. As C also assumes B's share in the liabilities, the basis of his acquired interest is $25,000 plus $5,000, or $30,000. If the partnership does not elect to adjust the bases of its properties, the following entry discloses the tax consequences:

Dr. Basis of B's Interest	$25,000	
Dr. Excess of C's over B's Basis	5,000	
Cr. Basis of C's Interest		$30,000

The $5,000 excess in C's basis clearly reflects the rise in market value of B's interest over its original cost basis and demonstrates that, in case of transfer of an interest, a balance of property bases and interest bases cannot be maintained unless the asset bases are adjusted in accordance with IRC 743 and 755. If this is done, the balance will be re-established as shown by the following entry:

Dr. Basis of B's Interest	25,000	
Dr. Basis of Property X	2,500	
Dr. Basis of Property Y	2,500	
Cr. Basis of C's Interest		30,000

Note that, as only B's interest was transferred, only one half of the total asset appreciation needs to be recorded to balance, and this is in accordance with treasury regulations.

The foregoing illustrations are presented only as examples for the application of a method of instruction. Once this method is understood, it can be applied to illustrate more complex situations of basis computation involving partnerships. It can also be used to explain certain tax problems peculiar to corporations, such as the computation of a corporation's "Earnings and Profits" as contrasted with the conventional Undivided Earnings account. It should be pointed out, however, that this method is presented only as a teaching device and not as a recommendation for a tax accounting system.

TEACHING OF ADJUSTING AND REVERSING ENTRIES IN THE ELEMENTARY ACCOUNTING COURSES

CLARENCE L. DUNN
Associate Professor of Accounting, Louisiana State University

Many elementary accounting students experience more than the usual amount of difficulty in learning and thoroughly understanding adjusting and reversing entries. This circumstance is not limited to those students who are weak in other phases of the course because many students who readily comprehend other topics acknowledge that adjusting and reversing entries present a serious challenge. The fact that some of these students do not meet this challenge satisfactorily is frequently manifested in the advanced accounting courses.

The writer, in working closely with elementary accounting students for several years, believes that this area of accounting offers great opportunity to any instructor to demonstrate good teaching ability. This is true because even with the most excellent of textbooks and problem materials, the student can benefit immensely from clear explanation and illustration of adjusting and reversing entries by the instructor.

Although I do not claim more than reasonable success in this area, my experience indicates that the following program can help students to learn adjusting and reversing entries faster and firmer: *First*, begin talking about adjustments and the need for end-of-period adjustments early in the course. This can be done even though the textbook does not introduce the topic until a later chapter. When an entry is made for the first time for a purchase of supplies or the payment of an insurance premium, mention can be made of the possibility of adjustment at the end of the accounting period. When an expense, such as rent or advertising, is paid and entered in the expense account the question can be raised as to what the transaction entry and adjusting entry should be if this were a payment for more than one accounting period. When wages are paid at the end of a month, the supposition can be made that some wages have been earned by employees, but were not included in the amount paid. This again can lead into a short discussion of the need for adjustment before preparing statements.

The intention in the early part of the course should not be to give a full discussion of the need for adjusting entries and how they are made, but rather, little by little, to get the students to realize that some adjustments will be necessary at the end of any accounting period. Later when attention is devoted to this topic exclusively, practically all the students will recognize that the topic of adjusting entries is not something entirely new—they will already have been introduced to them in a "pump priming" process.

Second, explain the purpose of adjusting entries explicitly when this topic comes up for full-scale consideration. One way to emphasize this is to prepare a profit and loss statement and a balance sheet from unadjusted data and then, after making a few appropriate adjustments, to prepare accurate statements from the adjusted data. Since this would take too much blackboard time to emphasize one point, the illustration might be mimeographed and placed in the hands of the students.

Third, explain thoroughly the nature of the main types of adjustments and illustrate the form of adjusting entry for bad debts, depreciation, accrued expenses, accrued incomes, prepaid expenses, and

unearned incomes. For example, in explaining accrued expense liabilities, the meaning of accrued expenses should be brought out in simple terms. Different kinds of typical accrued expenses can then be listed and illustrations of adjusting entries for one or two of these different accrued expense items can be made and discussed. A similar procedure can be followed for the other types of adjustments. The distinction between prepaid expenses and accrued expenses should be emphasized, as should the distinction between unearned incomes and accrued incomes. Furthermore, the similarity in the form of adjusting entry for different kinds of adjustments in each main category should be stressed.

Fourth, explain the purpose of reversing entries if this topic is discussed along with adjusting entries in the textbook. My experience here has been that the clearest procedure is to take one example, say accrued salaries or accrued interest, and follow it through the adjusting, closing, reversing, and subsequent payment or collection cycle with a blackboard "T-account" illustration. In explaining reversing entries for prepaid expenses and unearned incomes it is usually necessary to illustrate the original payment or collection in advance, adjustment, closing, and reversing cycle first under the assumption that reversing entries are not to be made and then under the opposite assumption. Such illustrations should be placed side-by-side on the blackboard and the similarities and the differences in procedures discussed.

Fifth, assign several problems for outside preparation and insist that the students make their best effort to work them. Some of these problems, in whole or in part, should be discussed in the classroom. In my opinion, this is one area of accounting where the student must work several problems and, if his solutions are incorrect, to understand completely *why* he was wrong and what the correct entries should have been.

Sixth, after the students have worked one or two problems involving the adjusting, closing, and reversing cycle, summarize the general procedures for the different types of adjustment items. An example of the summary which I have found to be quite helpful to my students is presented below: (This information may be mimeographed and handed out to the students, but a few minutes should be devoted to discussing it.)

I. *Accrued Expenses:* (wages, rent, interest, property taxes, etc.)

A. Reversing entries not to be used:

	Form of Entry	*Amounts*
Adjusting entry:	Dr. ________ Expense Cr. Accrued ________ Payable	for amount accrued since last payment or adjustment
Closing entry:	Dr. Profit and Loss Cr. ________ Expense	for adjusted balance of expense account
Reversing entry:	None	
Subsequent payment:	Dr. Accrued ________ Payable Dr. ________ Expense Cr. Cash	—for total amount accrued —for current expense —for total amount paid

B. Reversing entries to be used:

Adjusting entry:	Dr. ________ Expense Cr. Accrued ________ Payable	for total amount accrued at adjustment date
Closing entry:	Same as above.	
Reversing entry:	Reverse the adjusting entry.	

Subsequent payment:	Dr. ________ Expense Cr. Cash	for total amount paid

II. *Prepaid Expenses* (Insurance, rent, advertising, interest, supplies, etc.)

A. Reversing entries not to be used:

Original entry made for prepayment:	Dr. Prepaid (asset) account Cr. Cash	for total amount paid
Form of adjusting entry:	Dr. ________ Expense Cr. Prepaid (asset) account	for current period's expense
Closing entry:	Dr. Profit and Loss Cr. ________ Expense	for adjusted balance of expense account
Reversing entry:	None (asset account originally debited—no reversing entry required).	

B. Reversing entries to be used:

Original entry made for prepayment:	Dr. Prepaid (asset) account Cr. ________ Expense	for future periods' portion of expense
Closing entry:	Same as above.	
Reversing entry:	Reverse the adjusting entry. (Expense account originally debited —therefore, reversing entry is required.)	

The above outline gives a summary of accrued expenses and prepaid expenses only, but the outline might also include data for accrued incomes and unearned incomes in a similar fashion.

AMORTIZATION OF PREMIUMS ON BONDS ACQUIRED BY TRUSTS AND ESTATES

COLVILLE MACDOUGALL*

The article by Ralph W. Snyder entitled "Approximate Amortization of Bond Premiums by 'Payments Outstanding' (or 'Sum of Digits') Method" in THE ACCOUNTING REVIEW in April, 1959 deserves recognition for directing attention to the methods of computing and scheduling amortization values.

Accounting texts, in many instances, fail to emphasize the principles of amortization with respect to transactions relating to bonds acquired by trusts and estates as well as to bond investments of banks and life insurance companies.

Under decisions handed down by Courts of Appeal in certain states, it has been held that, in the absence of a clear direction in a will to the contrary, where a testamentary trustee purchases term bonds at a premium, such a proportionate deduction should be made from the fixed interest at each interest period as will amount, at maturity of the bond, to the premium paid and thus preserve the principal of the fund intact. In other words, the premium should be amortized.

Amortization protects the interests of both the remainderman and the life tenant. For example, if a $1,000 bond having

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20 years to run, bearing interest at 4% payable semi-annually, were purchased for \$1,100, the \$100 premium would be lost when the bond matures and is paid at its face value unless the premium has been amortized. Thus, the principal of the estate would be reduced by this \$100 to the injury of the remainderman. Likewise, if the trustee charged the whole amount of the premium against accumulated income at the time of purchasing the bond, he would exhaust the semi-annual interest received on the bond for 2½ years. If the life tenant were to die during or at the end of that period he would have received no return whatever from the investment. For these reasons the premium should be reduced gradually by amortization.

As a result of the requirement of the courts that trust and estate accounting be based upon cash receipts and disbursements special amortization schedules are required. These schedules should have the following columns:

Interest (coupon) dates.

Book Value of Bond—bond purchased at a premium.

Interest on Par Value (coupon).

Amortization Amount.

Interest on Book Value—at effective rate.

Interest on Amortization Amount—at effective rate.

Interest to Life Tenant—at effective rate.

The principles of amortization (for premiums and discounts) have been recognized for many years by life insurance companies in their system of valuation of bonds. The valuation method has an historical background in the provisions inaugurated by the insurance departments of the several states. The reasons for and advantages attaching to the method take their force from the nature of life insurance companies and the nature of the securities in which life insurance companies invest their funds. They are accumulating funds for the requirements of the future and not to cover immediate commitments.

PROFESSIONAL EXAMINATIONS

ACCOUNTING PRACTICE

Henry T. Chamberlain and John H. Chamberlain

The following problems were prepared by the Board of Examiners of the American Institute of Certified Public Accountants and were presented as the first half of the C.P.A. examination in accounting practice on November 4, 1959.

The candidates were required to solve all problems.

The suggested time allowances are as follows:

Problem 1	30 to 45 minutes
Problem 2	20 to 35 minutes
Problem 3	35 to 50 minutes
Problem 4	45 to 60 minutes
Problem 5	50 to 80 minutes

Number 1

The Hale-Haworth-Nye Partnership was formed in 1950 with partner Hale contributing the major portion of the capital, and partners Haworth and Nye providing the knowledge and experience necessary for the operation of the business. The partnership agreement specifies that the accounting records shall be maintained on the accrual basis, and that the net income shall be distributed to the partners in the following manner:

1. Each partner shall receive five per cent interest on the balance in his capital account at the beginning of the year.
2. Partners Haworth and Nye shall each receive a commission of twenty per cent of an amount representing net income determined by the cash basis method of accounting after deducting the normal allowance for depreciation, and the interest on capital. For this purpose all merchandise purchased is to be treated as an expense.
3. The net income remaining after deducting the interest on capital and commissions due to Haworth and Nye shall be distributed to the three partners equally except that the total portion of income distributed to partner Hale must not be less than fifty per cent of the net income determined by the accrual basis method of accounting.

During the year $150 of accounts receivable were considered uncollectible and charged off to the allowance for doubtful accounts, and $10 was collected on accounts which had been charged to the allowance for doubtful accounts in prior years.

There were no changes in the partners' capital accounts during the year.

Hale-Haworth-Nye Partnership

BALANCE SHEETS

Assets	*December 31, 1957*		*December 31, 1958*	
Cash		7,000		$ 11,120
Accounts receivable—customers	$ 5,000		$ 6,000	
Deduct—Allowance for doubtful accounts	100	4,900	120	5,880
Inventory		26,000		24,000
U. S. Government bonds—at cost		—		8,000
Fixed assets—at cost	120,000		120,000	
Deduct—Accumulated depreciation	42,500	77,500	46,300	73,700
Prepaid expenses		1,000		800
Total Assets		$116,400		$123,500

Liabilities and Capital				
Accounts payable—trade		$ 7,000		$ 4,000
Accrued wages		3,000		5,000
Accrued taxes		500		500
Deferred income		5,900		—
Net income year 1958		—		14,000
Partners' capital:				
Hale	$ 80,000		$ 80,000	
Haworth	12,500		12,500	
Nye	7,500	100,000	7,500	100,000
Total Liabilities and Capital		$116,400		$123,500

Required:

a. A schedule supported by clearly detailed computations showing the adjustments necessary to convert the net income for the year 1958 from an accrual basis to a cash basis.

b. A statement supported by clearly detailed computations showing the distribution to the partners of net income for the year 1958.

Number 2

You have been engaged to review the records and prepare corrected financial statements for the Graber Corporation. The books of account are in agreement with the following balance sheet:

Graber Corporation

BALANCE SHEET

December 31, 1958

Assets	
Cash	$ 5,000
Accounts receivable	10,000
Notes receivable	3,000
Inventory	25,000
	$43,000
Liabilities and Capital	
Accounts payable	$ 2,000
Notes payable	4,000
Capital stock	10,000
Retained earnings	27,000
	$43,000

A review of the books of the corporation indicates that the following errors and omissions had not been corrected during the applicable years:

December 31	*Inventory Overvalued*	*Inventory Undervalued*	*Prepaid Expense*	*Prepaid Income*	*Accrued Expense*	*Accrued Income*
1955	$ —	$6,000	$900	$—	$200	$—
1956	7,000	—	700	400	75	125
1957	8,000	—	500	—	100	—
1958	—	9,000	600	300	50	150

The profits per the books are: 1956, $7,500; 1957, $6,500; and 1958, $5,500. No dividends were declared during these years and no adjustments were made to retained earnings.

Required:

Prepare a worksheet to develop the correct profits for the years 1956, 1957, and 1958 and the adjusted balance sheet accounts as of December 31, 1958. (Ignore possible income tax effects.)

Number 3

Following are the income and expense accounts shown on the books of A. Realty Corporation for the year ended December 31, 1958:

Sales of housing		$500,000
Rental income		60,000
Cost of construction of housing sold	$450,000	
Profit on trade of depreciable equipment		1,000
Loss on sale of depreciable equipment	2,000	
Oil royalties received		10,000
Bad debt expense	2,000	
Provision for depreciation of equipment	25,000	
Other expenses	30,000	
	509,000	571,000
		509,000
Net income before federal income taxes		$ 62,000

Additional information:

Depreciation provided in the books is by the straight-line method. For income tax purposes, the corporation has elected to use the sum-of-the-years' digits method for eligible assets and $20,000 additional depreciation is deductible in the income tax return. It is assumed that the difference in depreciation by the two methods is material and that use of the accelerated method will defer income tax for only a relatively few years. Other differences in depreciation for tax purposes are to be ignored.

The profit on trade of depreciable equipment is analyzed as follows:

Cost of equipment traded in—acquired January 1, 1950	$30,000
Provision for depreciation to date of trade	20,000
	10,000
Allowance received in trade for similar equipment	11,000
Profit on trade	$ 1,000

The loss on sale of depreciable equipment comprised:

Cost of equipment—acquired January 15, 1952	$10,000
Depreciation provided to date of sale	4,000
Balance of cost	6,000
Sales price	4,000
Loss—book and tax basis the same	$ 2,000

Oil royalty interests have no cost basis. Percentage depletion for income tax purposes is 27½%.

Bad debt expense on the books represents the provision for the year added to an allowance for bad debts. The corporation uses the charge-off method in its income tax returns. Changes in the allowance for bad debts during the year were:

Balance at January 1, 1958	$10,000
Provision charged to expense	2,000
Recoveries of accounts written off in prior years—tax benefit received from write-offs	3,000
	15,000
Bad accounts written off	2,000
Balance at December 31, 1958	$13,000

During the year the corporation exchanged real property, acquired in 1940 and previously used in its operations, for capital stock of B Company held by an individual who had owned the stock for 5 years. The cost of the property exchanged less depreciation was $25,000, also its tax basis. No gain on the exchange was recorded in the books, and the investment in capital stock is carried at $25,000, although the stock at the time of the exchange had a ready market value of $100,000.

Federal income tax rates applicable to the corporation's taxable income are 30% on the first $25,000 and 52% on the excess. The alternative tax rate applicable to net long-term capital gains is 25%.

Required:

a. Prepare a schedule showing the items comprising federal taxable net income for the year and compute the income tax liability to be shown on the return.

b. Compute the provision for federal income taxes to be made in the corporation's statement of income for the year.

c. Discuss briefly any differences between this provision and the liability shown on the income tax return, and describe the treatment of the provision in the income statement and the balance sheet.

Number 4

The Unstable Furniture Company commenced business operations on January 1, 1957. All sales are made on installment contracts and inventory records are on a periodic basis. Contract receivables are kept separate by years. At the end of each year adjustments for unrealized and realized gross profits are made through a Deferred Gross Profit on Installment Sales account. Defaulted contracts were recorded by debiting the Loss on Defaults account and crediting the appropriate contracts receivable account for the amount unpaid at the time of default. All repossessed merchandise and trade-ins should be recorded at realizable values. Presented below is information taken from the accounts of the Unstable Furniture Company.

	1957	*1958*
Contracts receivable (unpaid balances):		
1957 Accounts	$ 62,425	$ 3,175
1958 Accounts		101,375
Installment sales	138,675	220,925
Purchases	160,000	154,600
New merchandise inventory, December 31, at cost	60,154	73,042
Loss on defaults		5,000

Additional information:

In the process of your audit you find that the following items were not included in the inventory taken on December 31, 1958:

(1) Merchandise received as a trade-in on December 15, 1958, for which an allowance was given. The realizable value of the merchandise is $500 which was the allow-

ance for the trade-in. No entry was made to record this merchandise on the books at the time it was received.

(2) Repossessed merchandise, originally sold in 1957, representing the only default and repossession by the company to date, had a realizable value of $2,000 at the time of repossession and at December 31, 1958. No entry has been made to record this repossessed merchandise.

Required:

a. Prepare the adjusting entry to record the trade-in merchandise.
b. Compute the gross profit percentages for 1957 and 1958.
c. Reconstruct the Deferred Gross Profit on Installment Sales account by years through December 31, 1958, showing in good form, all computations for the amounts included in the account.
d. Prepare the entry necessary to adjust the Loss on Defaults account.

Number 5

The Stanger and Theeler Company established a non-contributing profit-sharing trust for its employees, effective January 1, 1956. Contributions to the trust have been determined to be allowable as a deduction on the company tax return. The records of the trust have been kept by the company bookkeeper who has been able to compute prior years' distributions accurately. He hands you the following trial balance of the trust at December 31, 1958:

Stanger and Theeler Employee Profit-Sharing Trust

TRIAL BALANCE

December 31, 1958

Cash in bank	$1,505	
Savings and loan shares	1,000	
Government securities	2,000	
Stocks	1,095	
Loans to members	500	
Accrued interest receivable	85	
Liability to members		$6,000
Interest earned		260
Dividends		50
Payment on account to separated employee	115	
Brokers fees	10	
	$6,310	$6,310

From employee records and records of the trust, you determine the following:

Name	*Date Employed*	*1958 Salaries*	*Trust Account Balances December 31, 1957*
John Jones	2/ 1/38	$20,000	$2,500
Mary Smith	12/10/53	5,000	500
Oscar Johnson	1/20/43	15,000	1,500
Wendell Davis (Quit 8/31/58)	8/10/52	5,900	500
James Saunders	6/ 2/50	10,000	1,000
Susan Jacobs	8/10/56	5,000	
Sam Dodd	10/20/57	5,000	
		$65,900	$6,000

The profit-sharing trust agreement provides:

1. The annual company contribution to the trust is to be computed on the basis of income as determined for tax purposes, but before deduction of the profit-sharing contribution. The contribution is to be made at the rate of 10% of the first $50,000 of such income and 15% of the excess over $50,000.

2. Company contributions and relinquishments (forfeitures) are to be distributed to members in the employ of the company at the close of each year, on the basis of service and salary points; 1 point for each full year of company service and 1 point for each $100 of earnings for the year.

3. Annual earnings of the trust are to be distributed to members having balances in their membership accounts at the beginning of the year in the ratio that each such beginning balance bears to the total beginning balances.

4. An employee must have two full years of service to be eligible for participation in the trust. Eligibility for new members is to be determined as of the end of each particular year.

5. A member leaving the employment of the company for any reason other than at the instigation of the employer for cause is entitled to receive a percentage of his trust balance based on the number of full years of service with the company, as set forth in the following table:

1 year	10%	
2	20	
3	30	
4	40	
5	50	
6	60	
7	70	
8	80	
9	90	
10	100	(Employees do not participate in the company contribution for the year of separation.)

Income of the company for the year ended December 31, 1958 amounted to $60,666.67 before income taxes and deduction for its contribution to the plan.

Required:

a. Compute the profit-sharing contribution.

b. Compute:

(1) The distribution of company contributions to members' accounts.

(2) The allocation of trust income to members' accounts.

(3) The severance settlement and forfeiture of Wendell Davis.

c. Prepare in worksheet form a statement of the changes in the individual member accounts during the year ended December 31, 1958. (Show January 1, 1958 balances, all changes, and December 31, 1958 balances.)

d. Prepare a worksheet for the profit-sharing trust that shows all adjustments in the trust accounts for the year and the financial position of the trust on December 31, 1958. (Number and explain each adjustment on the worksheet.)

Solution to Problem 1

a. *Adjustment of Net Income to Cash Basis:*

Net income for 1958 on an accrual basis	$14,000

Adjustments to cash basis:		
Increase in accounts receivable		(1,000)
Increase in allowance for doubtful accounts		20
Decrease in inventory		2,000
Decrease in prepaid expense		200
Decrease in accounts payable		(3,000)
Increase in accrued wages		2,000
Decrease in deferred income		(5,900)
Net Adjustment		$(5,680)
Net Income on a Cash Basis		$ 8,320
Interest earned by partners on capital accounts:		
Hale	$4,000	
Haworth	625	
Nye	375	5,000
Balance of Net Income on Cash Basis upon which commissions due Haworth and Nye are to be Computed		$ 3,320

b. *Distribution of Net Income:*

	Hale	*Haworth*	*Nye*	*Total*
Interest on Capital accounts	$4,000	$ 625	$ 375	$ 5,000
Commissions earned by Haworth and Nye (20% of $3,320 each)		664	664	1,328
Distribution of remainder of net income	2,558	2,557	2,557	7,672
Adjustment of distribution of income so as to provide Hale with one half of net income	442	(221)	(221)	
Distribution of 1958 Net Income	$7,000	$3,625	$3,375	$14,000

Solution to Problem 2

Correction of Net Income;

	1956	*1957*	*1958*
Net income per books	$ 7,500	$6,500	$ 5,500
Adjustments to net income:			
Prior year's ending inventory overvalued (undervalued)	(6,000)	7,000	8,000
Current year's ending inventory (overvalued) undervalued	(7,000)	(8,000)	9,000
Increase (decrease) in prepaid expenses	(200)	(200)	100
(Increase) decrease in prepaid income	(400)	400	(300)
(Increase) decrease in accrued expense	125	(25)	50
Increase (decrease) in accrued income	125	(125)	150
Net adjustment	$(13,350)	$ (950)	$17,000
Adjusted net income (loss)	$ (5,850)	$5,550	$22,500

Correction of balance sheet accounts at December 31, 1958:

		Adjustment		*As*
	Per Books	*Dr.*	*Cr.*	*Adjusted*
Cash	$ 5,000			$ 5,000
Accounts receivable	$10,000			10,000
Notes receivable	3,000			3,000
Inventory	25,000	$9,000		34,000
Prepaid expenses		600		600
Accrued income receivable		150		150
Total	$43,000			$52,750
Accounts payable	$ 2,000			$ 2,000
Notes payable	4,000			4,000
Accrued expenses			$ 50	50
Prepaid income			300	300
Capital stock	10,000			10,000
Retained earnings	27,000		9,400	36,400
Total	$43,000	$9,750	$9,750	$52,750

Solution to Problem 3

a.

Net income per books—before provision for federal income tax	$62,000
Adjustments for taxable net income	
Additional deduction for depreciation resulting from sum-of-the-years' digits method	$(20,000)
Income from a trade-in reclassified as an adjustment to the basis of the new asset	(1,000)
Loss subject to capital gains treatment—long-term loss on the sale of depreciable equipment	2,000
Portion of oil royalties received not subject to tax	(2,750)
Reversal of provision for bad debt expense	2,000
Bad accounts written off in 1958	(2,000)
Recoveries of accounts written off in prior years	3,000
Net adjustment	$18,750
Taxable net income at ordinary rates	$43,250
Capital gains—net	
Long-term loss on the sale of depreciable equipment	$(2,000)
Long-term gain on the exchange of property for stock (based upon the fair market value of the stock at date of exchange)	75,000
Net long-term gain	$73,000
Federal tax liability	
On income taxable at ordinary rates ($43,250×52%−$5,500)	$16,990
On net long-term gain ($73,000×25%)	18,250
Total	$35,240

b.

Provision for federal taxes per books:	
Tax liability per return	$35,240
Deferred federal income taxes resulting from difference between depreciation expense per books and for tax purposes (52% of $20,000)	10,400
	$45,640
Less tax on exchange of real estate for marketable securities	18,750
Provision for federal income taxes	$26,890

c.

The liability on the tax return was computed after allowing a depreciation provision of $20,000.00 in excess of that reported in the accounts. The Accounting Research Bulletins take the position that the resulting reduction in taxes is a temporary advantage which will be offset by higher taxes in later years and require that provision for the future payments be made in the current statements. The Bulletins require that current income be charged for 52% of $20,000 or $10,400 with the credit going to a non-current liability account.

Another difference in the tax return liability and the book liability is the result of the treatment of the exchange of real estate for marketable securities. The gain of $75,000 was recognized for tax purposes but no gain was recognized in the accounts. The tax on the gain, $18,750, is unrelated to anything reported in the income statement so the book adjustment must be made as a credit to income and a charge to an asset account—perhaps the investment account, for want of a better place. By far, the better treatment would be to recognize the gain in the accounts and thus avoid the need for a tax allocation.

Solution to Problem 4

(a) Inventory—trade-ins	$ 500	
Installment sales		$ 500
To record goods omitted from inventory and to correct understatement of sales account.		
(b) *Computation of 1957 gross profit*		
Installment sales		$138,675
Cost of goods sold:		
Purchases	$160,000	
Inventory, 12-31-57	60,154	99,846
Gross profit		$ 38,829

Gross profit percentage, $38,829 ÷ $138,675 = 28%

Computation of 1958 gross profit

Installment sales (per books)		$220,925
Trade-ins (adjustment (a))		500
Total sales		$221,425
Cost of goods sold:		
Inventory, 12-31-57	$ 60,154	
Purchases—per books	154,600	
Trade-ins purchased (adjustment (a))	500	
Repossessed goods	2,000	
Total	$217,254	
Inventory, 12-31-58:		
New merchandise	$ 73,042	
Trade-ins	500	
Repossessed goods	2,000	
Total	$ 75,542	141,712
Gross profit		$ 79,713

Gross profit percentage, $79,713 ÷ $221,425 = 36%

(c)

DEFERRED GROSS PROFIT ON 1957 INSTALLMENT SALES

		Debit	*Credit*
Gross profit on 1957 sales			$38,829
1957 realized gross profit:			
Sales	$138,675		
Accounts receivable 12-31-57	62,425		
Collections	$ 76,250		
28% of $76,250		$21,350	
1958 realized gross profit on 1957 sales:			
Accounts receivable 12-31-57	$ 62,425		
Defaults	5,000		
Net	$ 57,425		
Accounts receivable 12-31-58	3,175		
Collections	$ 54,250		
28% of $54,250		15,190	
To relieve the account of the gross profit on defaulted contracts (28% of $5,000)		1,400	
		$37,940	$38,829
Balance		889	
		$38,829	$38,829

DEFERRED GROSS PROFIT ON 1958 INSTALLMENT SALES

		Debit	Credit
Gross profit on 1958 sales			$79,713
1958 realized gross profit on 1958 sales:			
Sales	$221,425		
Accounts receivable 12-31-58	101,375		
Collections	$120,050		
36% of $120,050		$43,218	
Balance		36,495	
		$79,713	$79,713
(d) Deferred gross profit on 1957 sales		$ 1,400	
Repossessed goods		2,000	
Loss on defaults			$ 3,400
To adjust the above accounts for loss on defaulted contracts.			

Solution to Problem 5

STANGER AND THEELER PROFIT SHARING TRUST CHANGES IN INDIVIDUAL MEMBERS ACCOUNTS DURING THE YEAR ENDED DECEMBER 31, 1958

Members	Members' Points at 12-31-58			Trust Account Balance at 12-31-57		Distribution of Trust Net Earnings (See Note 1)	Severance Settlements and Forfeitures See Note 2)	Distribution of Company Contribution and Forfeitures (See Note 3)	Trust Account Balances at 12-31-58
	For Service	For Salary	Total	Ratio to Total	Amount				
John Jones	20	200	220	5/12	$2,500.00	$ 125.00		$2,497.00	$5,122.00
Mary Smith	5	50	55	1/12	500.00	25.00		624.25	1,149.25
Oscar Johnson	15	150	165	3/12	1,500.00	75.00		1,872.75	3,447.75
Wendell Davis—Not in employ of company at 12-31-58				1/12	500.00	25.00	$(525.00)		
James Saunders	8	100	108	2/12	1,000.00	50.00		1,225.80	2,275.80
Susan Jacobs	2	50	52					590.20	590.20
Sam Dodd—Not eligible for participation									
			600		$6,000.00	$ 300.00	$(525.00)	$6,810.00	$12,585.00

Note 1: Net earnings of the trust are distributed to the members in the same proportion that their trust account balance at 12-31-57 bears to the total.

Note 2:

Trust account balance of Davis at 12-31-57	$ 500.00
Distribution of trust net earnings in 1958 (1/12 of $300.00)	25.00
	$ 525.00
Portion of trust account balance refundable—60% (based on six years service) of $525.00	$ 315.00
Forfeited portion	210.00
Total	$ 525.00
Severance settlement:	
Total amount due as above	$315.00
Paid on account	115.00
Balance due Davis	$200.00

Note 3:

Company contribution:	
10% of first $50,000 of net taxable income before deduction for profit sharing contribution	$5,000.00
15% of remainder of such income (15% of $10,666.67)	1,600.00
Total contribution	$6,600.00
Forfeiture by members of porton of trust account balances (See Note 2 above)	210.00
Total to be distributed to members at 12-31-58 in the ratio of points for service and salary	$6,810.00
Value per point earned by members ($6,810 ÷ 600 points)	$ 11.35

STANGER AND THEELER PROFIT-SHARING TRUST
BALANCE SHEET WORKSHEET
DECEMBER 31, 1958

	Trial Balance at 12-31-58		*Adjustments*		*Balance Sheet 12-31-58*	
	Dr.	*Cr.*	*Dr.*	*Cr.*	*Dr.*	*Cr.*
Cash in bank	$1,505				$ 1,505	
Due from company			(3) $6,600		6,600	
Savings and loan shares	1,000				1,000	
Government securities	2,000				2,000	
Stocks	1,095				1,095	
Loans to members	500				500	
Accrued interest receivable	85				85	
Liability to members		$6,000	(2) 315	(1) 300		
				(3) $6,600		$12,585
Due to Wendell Davis				(2) 200		200
Interest earned		260	(1) 260			
Dividends		50	(1) 50			
Payment on account to separated employee	115			(2) 115		
Brokers fees	10			(1) 10		
	$6,310	$6,310	$7,225	$7,225	$12,785	$12,785

(1) To close to members trust accounts net earnings of the trust in 1958.
(2) To record settlement of Wendell Davis' trust account.
(3) To record receipt of the company's contribution.

AUDITING

WALTER B. MEIGS

THE auditing section of the November, 1959 Uniform CPA Examination was given November 5, 1959, from 8:30 A.M. to 12 noon, and consisted of 9 questions. All questions were required and the following time allotments were suggested:

	Estimated Minutes	
	Minimum	*Maximum*
No. 1	10	15
No. 2	10	15
No. 3	15	20
No. 4	15	25
No. 5	15	25
No. 6	15	25
No. 7	20	25
No. 8	20	30
No. 9	20	30
	140	210

Number 1 (estimated time—10 to 15 minutes)

The following covenants are extracted from the indenture of a bond issue. The indenture provides that failure to comply with its terms in any respect automatically advances the due date of the loan to the date of noncompliance (the regular due date is 20 years hence). Give any audit steps or reporting requirements you feel should be taken or recognized in connection with each one of the following:

(1) "The debtor company shall endeavor to maintain a working capital ratio of 2 to 1 at all times, and, in any fiscal year following a failure to maintain said ratio, the company shall restrict compensation of officers to a total of $100,000. Officers for this purpose shall include Chairman of the Board of Directors, President, all Vice Presidents, Secretary, and Treasurer."

(2) "The debtor company shall keep all property which is security for this debt insured against loss by fire to the extent of 100% of its actual value. Policies of insurance comprising this protection shall be filed with the trustee."

(3) "The debtor company shall pay all taxes legally assessed against property which is security for this debt within the time provided by law for payment without penalty, and shall deposit receipted tax bills or equally acceptable evidence of payment of same with the trustee."

(4) "A sinking fund shall be deposited with the trustee by semiannual payments of $300,000, from which the trustee shall, in his discretion, purchase bonds of this issue."

Answer 1

(1) Review the balance sheets at the beginning and end of the fiscal year to determine the working capital ratio. Make a similar review of any available interim balance sheets.

Ascertain amount of compensation to officers during fiscal year, including any bonus or profit-sharing plan. If working capital ratio was below 2 to 1 in any of balance sheets reviewed, determine whether compensation to officers in subsequent period was within $100,000 limitation specified by the bond indenture. Review minutes of directors' meetings to ascertain that payments to officers conformed to amounts authorized.

(2) Prepare a schedule of property pledged under bond indenture, listing book value, appraised value, and insured amount. Ascertain whether property has been recently appraised; if no appraisal values are presently available, obtain estimated values from appropriate officer of company, and make independent inquiries from outside sources if reason for doubt exists.

Examine the copies of insurance policies

in client's possession or other documentary evidence of insurance in force. Confirm existence of insurance policies by direct correspondence with trustee.

(3) Examine paid checks and vouchers for all tax payments on property pledged under the bond indenture. Confirm with trustee the deposit of receipted tax bills. Ascertain by reference to property tax laws that all tax payments were made prior to the date for imposition of penalties.

(4) Confirm with the trustee the deposits in the fund during the year under audit, the beginning and ending balances of the fund, the purchases (and cancellations, if any) of bonds during the fiscal year, and the composition of the fund at the balance sheet date. Examine the paid checks and vouchers for payments to the trustee during the year. Determine that the fund is presented on the balance sheet as a non-current asset, and that the respective amounts of cash and bonds comprising the fund are disclosed.

In the event that any violation of the restrictive covenants of the bond indenture is discovered, full disclosure of the failure to comply should appear in a footnote to the financial statements.

Number 2 (estimated time—10 to 15 minutes)

The following events occurred in different cases, but in each instance the event happened after the close of the fiscal year under audit, but before all representatives of the auditor had left the office of the client. State in each case what notice, if any, you would take in your report on the fiscal year; the closing date in each instance is December 31, 1958.

(1) Merchandise handled by the company had been traded in the open markets in which it procures its supplies at $1.40 on December 31, 1958. This price had prevailed for two weeks, following an official market report that predicted vastly enlarged supplies; however, no purchases were made at $1.40. The price throughout the preceding year had been about $2.00 which is the level experienced over several years. On January 18, 1959, the price returned to $2.00, following public disclosure of an error in the official calculations of the prior December, correction of which destroyed the expectations of excessive supplies. Inventory at December 31, 1958 was on a cost-or-market basis.

(2) On February 1, 1959, the board of directors adopted a resolution accepting the offer of an investment banker to guarantee the marketing of $100,000,000 of preferred stock.

(3) On January 22, 1959, one of the three major plants of the client burned with a loss of $50,000,000 which was covered to the extent of $40,000,000 by insurance.

(4) The client in this case is an investment company of the open-end type. During the early part of 1959 a wholly new management came into control. By February 20, 1959 the new mangement had sold 90% of the investments carried at December 31, 1958 and had purchased others of a substantially more speculative character.

(5) This company has a wholly owned but not consolidated subsidiary producing oil in a foreign country. A serious rebellion began in that country on January 18, and continued beyond the completion of your audit work. The press in this country has carried extensive coverage of the progress of the fighting.

Answer 2

Important events occurring after the close of the year under audit but prior to completion of the audit work should be reflected in the financial statements or disclosed in the audit report if their importance is such as to make a material change in the company's operations or financial condition.

(1) To price the inventory on the basis of the brief and extraordinary dip in market price to the $1.40 level would seriously distort the reported earnings and financial position of the company, and would serve no useful purpose. The relatively stable and permanent price of $2.00 appears to be the more valid and meaningful measure of "market" under the circumstances. The accountant is responsible for intelligent application of accounting principles to business situations and should not blindly follow the "rules" in a slavish or mechanical manner.

(2) The agreement for marketing $100,000,000 of preferred stock should be disclosed in a footnote to the balance sheet, since this "post-balance sheet event" might change materially the reader's reaction to the statements.

(3) The fire loss and the extent of the impairment of the company's operations should be disclosed in a footnote to the financial statements. Otherwise the reader who estimated future earnings and debt-paying ability upon the basis of the 1958 statements might be misled.

(4) The change in management and in investment policy should be disclosed in a footnote to the statements. Such disclosure will guard the reader against the natural assumption of continuity in the nature of the company's assets and policies.

(5) The fact that the rebellion has been widely publicized does not alter the need for disclosure in a footnote to the statements. The only reason for not making such disclosure would be on the grounds that the assets and operations of the subsidiary were not material in relation to the assets, revenues, and net income of the parent.

Number 3 (Estimated time—15 to 20 minutes)

a. An auditor obtains data from several sources in the course of making an audit. These data and other details are incorporated in the working papers. List *six* general classifications of the *content* of working papers which are usually prepared in connection with an annual audit, and *give an example* of each classification. In classifying the content consider the source of evidence and the auditor's activities.

b. Give a list of forms or types of working papers that you would expect to find in an ordinary annual audit.

Answer 3

a. General classification of content of working papers.
   1) Data used in planning and supervising the engagement, such as the audit program.
   2) Evaluation of internal control, such as internal control questionnaires, and notes on controls in force.
   3) Evidence gathered from financial records of client, such as working trial balance, lead schedules, and supporting schedules.
   4) Evidence gathered from non-financial records of client, such as minutes of directors' meetings.
   5) Certificates or formal representations by clients, such as inventory certificate or liability certificate.
   6) Evidence gathered from sources outside the business, such as confirmation of bank balances and accounts receivable.
   7) Tests of transactions. Statements summarizing the work done in proving the accuracy and dependability of journal entries, posting, and other bookkeeping procedures.
   8) Independent computations by the auditor, such as amounts payable to officers under bonus plan.
   9) Permanent file as distinguished from current year's file of working papers. Unchanging data such as excerpts of bond indenture.

b. Forms or types of working papers.
  1) Audit program
  2) Internal control questionnaire
  3) Working trial balance
  4) Adjusting journal entries
  5) Reclassification entries
  6) Leading or summary schedules
  7) Supporting schedules
  8) Account analyses
  9) Computational work sheets
  10) Abstracts of minutes
  11) Certificates provided by client
  12) Confirmation requests
  13) Permanent file (papers covering relatively unchanging data such as terms of stock and bond issues)

Number 4 (Estimated time—15 to 25 minutes)

Autos and Trucks, Inc., organized three years ago, buys passenger automobiles and trucks which it leases for periods of 18 months to four years. All purchases are made *after* a lease agreement has been signed. No supply inventories of any kind are maintained.

You have been engaged to make the first audit of the company's affairs. At the time you accept the engagement there are in force 100 leases covering 124 passenger cars and 80 leases covering 210 trucks.

Present in outline form the procedures you would follow in verifying gross income from lease contracts.

Answer 4

To verify gross income from the lease contracts, the following audit procedures should be followed:

1. Evaluate the system of internal control to determine the extent of tests needed. (Give particular attention to separation of cash-handling from record-keeping, to managerial authorizations of leases, and to internal reports on leases, idle equipment, and monthly revenues.)
2. **Prepare or obtain from client a list of leases in force during the year under audit.**
3. **Verify the following facts about individual leases. (A sampling approach appropriate to the quality of internal control may be used.)**
   a) **Identity, location, and existence of lessees. Confirm by direct correspondence.**
   b) **Make, model, and serial numbers of automobiles and/or trucks covered by the lease.**
   c) **Period covered by the lease.**
   d) **Payments required and dates thereof.**
4. **Prepare or obtain a schedule of the 124 passenger cars and 210 trucks, and reconcile this list with the passenger cars and trucks specified by individual leases in (3) above.**
5. **Vouch purchases of automobiles and trucks during the year, and tie in the dates of purchase with assignment of units to lessees.**
6. **Make independent computation of potential revenue for the year by applying authorized rental rates for automobiles and trucks owned during the period. Compare computed amount with recorded revenues; evaluate discrepancies, and discuss with management.**
7. **Compare cash receipts for period with recorded revenues and investigate differences.**
8. **Make detailed tests of cash receipts for one or more months during year.**
9. **Prepare monthly schedule of rental revenues of passenger cars and trucks for the three years company has operated. Investigate significant variations, and discuss seasonal trends with management.**
10. **Verify accuracy of cut-off of revenue at beginning and end of year under audit. Observe consistency of treat-**

ment of prepayments and accruals of rent.
11. Compare past-due rental payments at balance sheet date with those of preceding years.
12. Confirm past-due rentals by direct communication with lessees.
13. Investigate defaulted leases, disposition of receivables thereunder, and disposition of cars or trucks involved.

Number 5 (Estimated time—15 to 25 minutes)

The Hertle Engineering Co. specializes in the development of new products. It carries on extensive research for this purpose, and it consistently charges the cost of research to current operations. In January, 1956 it began a research project called "Project Able," looking to the development of a new machine. Work continued on the project until January, 1959, at which time a patent was applied for on the machine, and project was closed. Because of the specific nature of the company's objective in the project and its confidence that it would result in a patent, the research costs of "Project Abel" were charged to a special account. The balance of this account was transferred to "patents" account at June 30, 1959, when a patent was granted.

Give an audit program for the patent acquired as a result of "Project Able," assuming that you are auditing this company for the first time at December 31, 1959.

Answer 5

1. Review the authorization of Project Able in the minutes of directors' meetings, noting particularly the amounts authorized and instructions to capitalize costs.
2. Compare total recorded costs with amounts authorized by directors.
3. Discuss with the chief engineer or other official the progress made on the project, excessive costs if any, and commercial possibilities of the machine.
4. Review internal reports comparing actual costs incurred during the project with budgeted costs, and investigate significant differences.
5. Prepare or obtain from the client an analysis of all costs incurred on the project.
    a) Vouch costs of materials by reference to requisitions, invoices, and specifications of machine.
    b) Test labor costs to payroll records and review evidence that employees involved were actually working on this project.
    c) Review reasonableness of allocation of overhead to the project. Compare with total overhead. Ascertain whether costs of idle facilities were included.
6. Analyze research and development expense accounts to determine whether any charges therein relate to Project Able.
7. Review the documents evidencing granting of the patent; ascertain whether legal costs of securing patent were capitalized.
8. Investigate the market value of the patent at the balance sheet date in the light of sales of the machine to date, orders on the books, and appraisal of sales prospects by sales executives.
9. Ascertain whether patent has been licensed to others; if so, review licensing agreements and royalties earned and received.
10. Consult with officers and with client's legal counsel to determine significance of any patent litigation in process or contemplated,

Number 6 (Estimated time—15 to 25 minutes)

You have been instructed to make an examination of the financial statements of Price-Marcus Manufacturing Company. You are furnished the following condensed balance sheet:

Cash	$ 100,000	Notes payable	$ 200,000
Accounts receivable—trade	300,000	Accounts payable—vendors	200,000
Deposits, due from officers, etc.	100,000	Rent, taxes, etc., payable	300,000
Inventory	400,000	Long-term debt	500,000
Plant and equipment	1,000,000	Capital stock	1,000,000
Investments and advances—subsidiaries	400,000	Retained earnings	200,000
Prepaid expenses and other assets	100,000		
	$2,400,000		$2,400,000

Your assistant will be carrying out most of the work. State for his guidance what information he should request third parties to confirm directly to him.

Answer 6

The following information should be verified by direct confirmation with third parties:

1. Cash on deposit with banks. Confirmation requests should include inquiry as to indebtedness, and as to contingent liability.
2. Accounts receivable—trade. The circularization of customers may involve positive or negative confirmations or both. The extent of the test should be determined in the light of the internal control in force.
3. Deposits and amounts due from officers. (The dates of advances to officers should be ascertained.)
4. Inventories in hands of consignees, also inventories stored in public warehouses or in hands of others for special processing, such as heat-treating.
5. Advances to subsidiaries. Examination of the subsidiary companies may obviate this confirmation step.
6. Notes payable, including amounts, maturity dates, interest rates, collateral, and any other actual or contingent liability.
7. Accounts payable—vendors. Probably on a test basis stressing larger accounts.
8. Long-term debt. Amounts, maturity dates, interest rates, and collateral should be verified.
9. Capital stock. Confirm with stock registrar the number of shares outstanding, unless company maintains its own stock records.
10. Pending litigation. Confirm with client's legal counsel actions pending against company.

Number 7 (Estimated time—20 to 25 minutes)

Internal control, in the broad sense, includes controls which may be characterized as either administrative or accounting.

a. What comprises and is generally included in (1) administrative controls and (2) accounting controls?

b. What bearing do these controls have on the work of the independent auditor?

Answer 7

a. (1) Administrative controls include measures intended principally to encourage compliance with company policy, and to promote the efficiency of operations in all divisions of the business. These controls constitute an important tool of management, especially in large-scale organi-

zations, but they do not relate directly to financial operations or to the financial statements. Examples of administrative controls are production scheduling, written standards to be followed in selection of new employees, employee training programs, product inspection procedures, and production reports.

(2) Accounting controls include measures which bear on the dependability of the accounting records and financial statements, and the safeguarding of assets. Particularly important in this group of controls are the separation of record-keeping from the custody of assets, budgetary techniques, cost accounting, written statements of accounting policies, and the serial numbering of documents.

The classifications of administrative controls and financial controls are not mutually exclusive in all cases. The plan of organization of the controller's department, for example, is an important element of financial control, but the plan of organization of the production and sales departments, or of the business as a whole, may be regarded as part of the structure of administrative controls.

b. One of the Standards of Field Work set forth by the Committee on Auditing Procedure of the AICPA requires that the auditor study and evaluate the system of internal control as a basis for reliance thereon and as a guide in determining the extent of the tests to be made. To carry out a satisfactory examination of the financial statements, the auditor must evaluate those controls which bear on the dependability of the accounting records and of the financial statements. In other words, the auditor must evaluate the *financial controls*. He is not responsible (under ordinary circumstances) for evaluation of controls of an administrative nature designed to promote more efficient operations in the fields of production or sales.

Number 8 (*Estimated time—20 to 30 minutes*)

You are requested by a department store client to study the inventory shortage results as shown by the departmental retail inventory control book (generally referred to as "retail synopsis ledger"). After investigation you discover the following:

1. Merchandise was erroneously sold for $20.00 when it should have been sold for $23.00.

2. Certain salespeople recorded simply the net sales value for items sold to employees instead of showing gross sales price less employee's discount.

3. Some buyers were marking merchandise higher or lower than the original retail price indicated on the invoices without preparing price change reports.

4. There were other buyers who were putting through a "mark-up" on items which had been previously "marked down" for a special sale.

5. In the actual taking of the inventory you noticed that buyers distributed the inventory sheets, their salespeople counted and listed the items and the buyers collected the sheets and turned them into the controller's office the following day.

6. Items set aside in the department representing merchandise sold on "lay away" terms were listed on the inventory sheets by the salespeople.

Required:

a. Explain briefly the principle of the retail inventory method as it pertains only to retail inventory control.

b. Explain the application of this principle to each of the above situations, stating whether or not each of these would have any effect on the comparisons of book and physical inventory balances and, if so, in what way would such effect operate.

Answer 8

a. Use of the retail inventory method permits the preparation of monthly financial statements without the taking of a physical inventory each month. This inventory method provides current retail values for the merchandise on hand in each department; these retail values are converted to a cost basis at the end of each month and these computed cost figures for inventory are used in the financial statements. Control over inventories is strengthened by the availability of the computed inventory figures for comparison with physical counts. In most department stores, semi-annual physical inventories are taken at retail, and the departmental synopsis ledger is adjusted in accordance with such counts.

b. 1. The retail book inventory would show $3 more than the physical inventory of this item. The goods were originally charged to the book inventory at $23; when the goods are sold, the book inventory must be credited for $23, or there will be an erroneous balance remaining in the account.

2. As in the preceding case, the book balance will exceed the amount of the physical inventory. The salespeople who recorded net sales value rather than gross sales price and employees' discount caused a discrepancy by not crediting inventories on the same basis as the original charge for the merchandise.

3. Failure by buyers to record the mark-ups and mark-downs will cause the inventory to be reduced by sales values different from those originally charged to inventory. Failure to record a mark-up will cause the book inventory to be lower than the physical inventory; failure to record a mark-down will cause the book inventory to exceed the physical count.

4. The recording of a "mark-up" rather than "mark-down cancellation" will not create any discrepancy between the book inventory and the physical count. However, this practice will result in an overstated "mark-up" for the department, and this factor will affect the computation of a cost value for inventory, causing the cost figures to be understated.

5. The top management of the company should assign to a key official (perhaps the controller) full responsibility for planning and taking the physical inventory. This official should develop detailed written instruction to be used as a guide by each supervisor or employee participating in the physical inventory. At the time of taking the inventory, the responsible official and any necessary assistants should devote their full time to observing the work and determining that the written plan is carried out in detail.

The written plans for inventory-taking should be explained and discussed with employees in advance, and also reviewed with the public accountants who will observe the inventory.

The case cited indicates lack of control over inventory sheets which would afford opportunities for alteration of the data compiled in the count. The results of the physical inventory could therefore not be relied on.

6. Sales transactions have been recorded for the "lay away" merchandise and it must not be included in the physical inventory. If it is included, the physical inventory will be in excess of the book inventory. To avoid such errors, the advance planning for inventory should require the assembling of all "lay away" merchandise in one designated and controlled area to insure that it is not included in the count.

Number 9 (Estimated time—20 to 30 minutes)

The financial statements of the Modern Manufacturing Company for the fiscal

year ended September 30, 1959 are presented below. The president of the company has requested you to make this year's examination and render a short-form audit report on the statements. The report would be addressed to the board of directors and no restrictions would be placed on the scope of your audit work.

During the course of the audit you learn that inventories of finished products and work in process are stated at material cost alone, without including either labor or manufacturing overhead; that this practice has been followed for both tax and financial accounting purposes since the inception of the company in 1946; and that the elements of cost in the inventories should have been as follows at the beginning and end of the fiscal period:

	Finished Goods September 30,		*Work in Process September 30,*	
	1959	*1958*	*1959*	*1958*
Materials	$ 88,000	$ 75,000	$34,000	$31,000
Labor	55,000	52,000	16,000	14,000
Overhead	28,000	24,000	17,000	16,000
	$171,000	$151,000	$67,000	$61,000

Except for the company's inventory methods, the statements are found to be acceptable in all respects.

Through an examination of the previous auditor's working papers, you have been able to satisfy yourself as to the correctness of the physical count and material cost of the opening inventory.

(See tabulation at bottom of page)

Modern Manufacturing Company
STATEMENT OF INCOME AND RETAINED EARNINGS
Year Ended September 30, 1959

Net sales of manufactured product	$750,000
Cost of materials, including freight	300,000
Gross profit on sales	450,000
Operating expenses	385,000
Earnings from operations	65,000
Other deductions, less other income	22,000
Earnings before taxes on income	43,000
Taxes on income (federal $12,000, state $1,000)	13,000
Net earnings	30,000
Retained earnings—September 30, 1958	58,500
Retained earnings—September 30, 1959	$ 88,500

Required:

Prepare an audit report (auditor's certificate) addressed to the board of directors, such as is justified in the circumstances set forth above. *Do not* submit financial statements or notes to financial statements.

Answer 9

To the Board of Directors
Modern Manufacturing Company
Alexander, Iowa

October ______, 1959

We have examined the balance sheet of

Modern Manufacturing Company
BALANCE SHEET
September 30, 1959

ASSETS		*LIABILITIES*	
CURRENT ASSETS		*CURRENT LIABILITIES*	
Cash	$ 12,000	Trade accounts payable	$ 29,000
Accounts receivable (net)	22,000	Salaries and wages	5,500
Inventories, at material cost (first-in, first-out) or market, whichever lower	146,000	Taxes, other than taxes on income	8,000
Prepaid expenses	6,000	Taxes on income	13,000
Total current assets	186,000	Total current liabilities	55,500
		STOCKHOLDERS' EQUITY	
Property, plant, and equipment (net)	158,000	Common stock, par value $100 a share, authorized, issued and outstanding 2,000 shares	200,000
		Retained earnings	88,500
	$344,000		$344,000

Modern Manufacturing Company as of September 30, 1959, and the related statement of income and retained earnings for the year then ended. Our examination was made in accordance with generally accepted auditing standards, and accordingly included such tests of the accounting records and such other auditing procedures as we considered necessary in the circumstances.

The amounts shown for inventories of finished goods and work in process represent material cost only; labor cost and overhead cost although generally recognized as components of inventory value have been excluded in accordance with the established policy of the company. The result of this policy is the reporting of substantially lower amounts for inventories and for stockholders' equity than would be computed under generally accepted methods of inventory valuation. Since the amounts of labor and overhead costs excluded from inventory tend to vary from year to year, the annual net earnings reported, and taxes based on these earnings, will also differ from those which would be determined by the use of generally accepted methods of inventory valuation.

Because of the departure from generally accepted accounting principles in the valuation of inventory, we are unable to express an opinion as to the fairness with which the accompanying financial statements taken as a whole present financial position and the results of operations.

(Certified Public Accountants)

ASSOCIATION NOTES

Wendell P. Trumbull

Editor's Note: Members of the Association are urged to submit news items for this section to Wendell P. Trumbull, College of Business Administration, Lehigh University, Bethlehem, Pennsylvania. Deadline dates for the receipt of items to be included in The Review are October 15 for the January issue, January 15 for the April issue, April 15 for the July issue, and July 15 for the October issue.

AUSTRALIA

University of Sidney

Raymond J. Chambers has been on a year's leave of absence studying schools of business administration in the United States on a grant from the Relm Foundation.

THE PHILIPPINES

Xavier University

Eduardo C. Gopez is the new dean of the College of Commerce.

CALIFORNIA

San Jose State College

H. A. Hoverland has been appointed to the staff as assistant professor.

Donald E. Roark was chairman of the First Annual Accounting Conference last May, presented jointly by the Accounting Department and the San Jose Chapter of the California Society of CPAs.

University of Southern California

Richard L. Williamson has been appointed assistant dean in charge of graduate programs for the School of Commerce. Charles R. Purdy, formerly of the University of Minnesota, has joined the faculty as an assistant professor. Lyle H. McIff has joined the faculty as lecturer while working on the doctorate.

Paul R. Cone attended the Finance Forum, held in New York City last June. He is participating in the continuing education program sponsored by the California Society of CPAs. David H. Li spent last summer on the staff of Haskins & Sells in Los Angeles.

GEORGIA

Emory University

Patrick S. Kemp has been appointed assistant professor. He received the Ph.D. degree last June from the University of Illinois.

University of Georgia

James W. Baker has been added to the faculty at the rank of assistant professor.

The Seventh Federal Income Tax Course was held September 8–10 on the campus. The Thirteenth Accounting Institute, sponsored jointly by the Georgia Society of CPAs and the Department of Accounting, was presented last October 15–17.

ILLINOIS

University of Chicago

The following accountants appeared in a series of lectures presented by the Graduate School of Business at the Art Institute of Chicago during October and November: Andrew Barr, Raymond J. Chambers, Paul F. Lorenz, William A. Paton, and J. S. Seidman.

De Paul University

Edwin Cohen has accepted a position on the faculty of Michigan State University, where he will be teaching and working on the doctorate.

Southern Illinois University

Edward Schmidlein, formerly of St. Louis University, joined the staff in September as professor of accounting.

KANSAS

Kansas State College of Pittsburg

M. J. Little is on sabbatical leave, attending the University of Arkansas. Max Stacy has been appointed to the staff.

University of Wichita

The Fifth Annual Petroleum Accounting Conference will be held May 6 on the campus.

KENTUCKY

Bellarmine College

A CPA coaching course was instituted last August. During the fall an eight-week study course, dealing with management services, was offered on the campus under the sponsorship of the Kentucky Society of CPAs.

LOUISIANA

Louisiana State University in New Orleans

J. HERMAN BRASSEAUX has joined the faculty as associate professor. LOUIS E. MULLEN has been appointed instructor.

Louisiana State University in New Orleans commenced its second year in September, with KENNETH M. GIBSON and ALBERT S. PERRY continuing as instructors.

Loyola University (New Orleans)

WILLIAM P. CARR became the first faculty vice-president of the Beta Zeta Chapter of Beta Alpha Psi, formally installed on the campus in November. CARR is also serving as chairman of the accounting section of the Southwestern Social Science Association, and as secretary-treasurer of the Gamma of Louisiana Chapter of Beta Gamma Sigma.

RALPH R. SWOBODA has been appointed an instructor on the staff.

Southwestern Louisiana Institute

PAUL W. BURNAM recently received the Ph.D. degree from the University of Alabama. JOEL E. BRAKEFIELD has accepted an associate professorship.

MARYLAND

University of Maryland

JOHN WILLIAM WAGNER, formerly with Arthur Andersen & Co., has joined the accounting staff as an instructor.

MASSACHUSETTS

University of Massachusetts

ARTHUR ELKINS has been appointed instructor in accounting and management.

MICHIGAN

Ferris Institute

LESTER L. DITTMAN has been appointed to a position on the staff. He temporarily replaces LADONNA MICHAELSEN who is pursuing graduate studies at Michigan State University.

University of Michigan

Additions to the staff are as follows: W. C. GALLUPS, from Shell Oil Co.; SIDNEY PAUL, from Peat, Marwick, Mitchell & Co.; P. H. PREIS, from E. I. du Pont de Nemours & Co.; and PETER ROSKO and E. A. SPILLER, both doctoral candidates at the University. In addition, BYRAN SMYTH of New South Wales University of Technology joined the staff as lecturer for the 1959-1960 fall semester. HADLEY P. SCHAEFER is teaching this year in the University's new center in Dearborn.

CLARENCE B. COX has been conducting the Seminar in Accounting Theory in place of GEORGE D. BAILEY, who initiated the seminar in 1958.

S. R. HEPWORTH and HERBERT F. TAGGART are serving as members of the Accounting and Auditing Procedures Committee of the Michigan Association of CPAs.

Wayne State University

JACK GRAY has been added to the staff with the rank of instructor. DONALD GORTON and RONALD HORWITZ have been appointed graduate fellows.

Western Michigan University

JAMES CARTER has joined the staff as an assistant professor. ROBERT P. BEHLING was chairman of the fall meeting held by the Southwestern Chapter of the Michigan Association of CPAs.

ROBERT WETNIGHT is serving as a national director of NAA; he is also a member of the NAA research project committee on direct costing. G. A. KIRBY is serving a second term as chairman of the Library Committee of the Kalamazoo Accountants Association.

MINNESOTA

University of Minnesota

CARL L. NELSON is teaching at Abo Academy and the University of Turku in Turku, Finland. KENNETH CUBBAGE is a new instructor.

JOHN DETTMANN is serving this year in Seoul, Korea, as an adviser in public administration with the University's Korea Cooperative Project at Seoul National University. BETRAND HORWITZ spent the fall quarter at the Russian Research Center, Harvard University.

MISSOURI

University of Missouri

JOHN D. SHEPPARD and R. B. VINSON have received appointments as instructor in accounting and instructor in statistics, respectively. Both are candidates for the Ph.D. degree in accounting.

NEW YORK

The City College

JOSHUA WACHTEL received the Ph.D. degree in September, 1959, and was appointed assistant professor as of that date.

New York University

New appointments to the faculty at the School of Commerce are OSCAR M. KRIEGMAN, associate professor, PAUL M. LEGMAN, assistant professor, and JOHN D. CORDNER, instructor.

The Charles Waldo Haskins Memorial Room, a classroom designed to permit extensive use of visual aids, was opened last fall. MR. HASKINS served as dean of the School from its founding in 1900 until his death in 1903.

NORTH CAROLINA

Duke University

MARTIN L. BLACK, JR. has been appointed to the North Carolina State Board of CPAs.

THOMAS KELLER received the Ph.D. degree from the University of Michigan and has joined the staff as an assistant professor.

JOHN BLACKBURN has joined the staff as assistant professor of economics, and is teaching accounting. FAY CULPEPPER resigned to accept a position with Price Waterhouse & Co. in New York.

ROBERT L. DICKENS has been appointed to the committee on accounting for non-profit organizations of the AICPA. He is serving as chairman of a similar committee in the North Carolina Association of CPAs.

NORTH DAKOTA

University of North Dakota

WILLIAM MCMENAMY has joined the staff as an instructor. ROBERT BOGGS is on leave to work on the doctorate at Indiana University.

DONALD STANHOPE is making a fee study for the North Dakota Society of CPAs.

OHIO

Bowling Green State University

HARVEY E. DONLEY has been appointed to an associate professorship. EDWIN C. BOMELI has been granted a leave of absence, effective January 1, to work on the doctorate at Michigan State University.

WILLIAM F. SCHMELTZ has received a research grant to study petroleum refinery accounting methods. On November 12 a Business and Industry Symposium and a meeting of the Institute of Internal Auditors were held on the campus in commemorating the fiftieth anniversary of the University.

OREGON

University of Oregon

CHARLES E. JOHNSON is on sabbatical leave for the year 1959–1960. DALE S. HARWOOD, JR. supervised a five-day seminar on management advisory services for certified public accountants on the campus in September. The seminar was held in cooperation with the Oregon State Society of CPAs.

MORTON F. MOSS spent last summer at the University of California at Los Angeles under a grant from the Ford Foundation. JOHN SOMA made a study last summer of the data processing system of the Bank of America in San Francisco.

PENNSYLVANIA

Lehigh University

CLAIR W. NOLL joined the faculty last September as an instructor upon returning from two years of service with the U. S. Army Audit Agency in Tokyo, Japan. JOHN C. HARDING, III and MYLES L. MILLER are new graduate assistants in the Department of Accounting.

The Pennsylvania State University

WILLIAM J. SCHRADER received the D.B.A. degree from the University of Washington last summer. New additions to the staff in September, 1959, were TED M. RABUN, assistant professor, and A. JAY HIRSCH, lecturer.

G. KENNETH NELSON is a member of the educational committee of the Pennsylvania Institute of CPAs and of the National Board of NAA and of its committee on accounting development.

The fifth annual Accounting Study Conference was held on the campus last August in cooperation with the Pennsylvania Institute of CPAs.

University of Pittsburgh

GEORGE O. LUSTER has been appointed lecturer in accounting.

Villanova University

The Seventeenth Annual Accounting Forum was held November 12 on the campus in cooperation with the Philadelphia Chapter of the Pennsylvania Institute of CPAs and the other colleges and universities in the area.

TEXAS

Agricultural and Mechanical College of Texas

JOHN E. OLIVER has joined the accounting staff as an assistant professor. WALTER S. MANNING participated last year in the program of the Southwestern Social Science Association; he also spoke before the Sabine Chapter of NAA.

University of Houston

HOWARD M. DANIELS served as consultant to

the Comptroller General of Panama during the summer of 1959. PAUL W. LINDLOFF has been promoted to associate professor.

New faculty members at the rank of assistant professor are TOM MOSS, previously in public practice, and MILTON F. USRY, from the Shell Chemical Corporation. Robert F. Polson has resigned.

WASHINGTON

University of Washington

ARTHUR N. LORIG has returned from a sabbatical leave in Europe. FRED J. MUELLER has been promoted to associate professor. W. Baker Flowers received the Ph.D. degree last June from the University of Texas.

RICHARD D. BRADISH, BRYCE B. ORTON, and JOSEPH J. O'ROURKE have been appointed lecturers in accounting; all are completing requirements for the D.B.A. degree. GERALD L. CLEVELAND, of the University of South Dakota, has been appointed part-time lecturer while working on the doctorate. New teaching assistants are WILLARD C. BUNNEY, JOSEPH D. GIVEN, MARK S. RULJANCICH, JOHN V. SLANINKA, ROBERT W. STEVENS, ROBERT E. VITRO, MATHILDA TASSIN, and DONALD D. BORQUE.

ROBERT K. JAEDICKE of the Graduate School of Business Administration, Harvard University, held an appointment as visiting assistant professor last summer. REED K. STOREY was a visiting assistant professor at the University of California during the 1959 summer session.

LAUREN M. WALKER, KERMIT O. HANSON, and FRED J. MUELLER served on the faculty of the annual Advanced Management Seminar conducted at the University.

The Department joined with the Washington Society of CPAs and the AICPA in sponsoring the Fifth Northwest Graduate Accounting Study Conference at Harrison Hot Springs, British Columbia, September 17–19.

KENNETH B. BERG held a faculty residency during the past summer with General Electric Company at Hanford.

WEST VIRGINIA

Marshall College

MELVILLE L. GILL has been promoted to the rank of associate professor. RAMON A. LOONEY has joined the faculty as an instructor.

L. GLENN ARBAUGH is serving as president of the Huntington Chapter of the West Virginia Society of CPAs.

WISCONSIN

St. Norbert College

ROBERT K. FINNEGAN received the M.B.A. degree from the University of Notre Dame in August, 1959.

BOOK REVIEWS

JAMES S. LANHAM, *Editor*

Accounting

Economics

Finance

General

Law

Taxes

Accounting

American Institute of Certified Public Accountants, *Guides to Successful Accounting Practice* (New York, 1959, pp. 162); *Accounting Aids to Management* (New York, 1959, pp. 79, $1.50).

These two volumes have been compiled from material appearing in *The Journal of Accountancy.* They provide a helpful summary of thoughts on (1) everyday operating problems of accounting firms, and (2) the part that the CPA can play to assist management in areas other than audit and tax practice.

Guides to Successful Accounting Practice was edited by Bernard B. Isaacson and consists of selections from the "Practitioner's Forum," a regular department of *The Journal of Accountancy.* Some of the most helpful contributions have been organized into sections dealing with:

- Office procedures
- Client relations and special services
- Management services
- Reports to clients
- Handling tax returns and reports
- Fees and billing practices
- Partnership and staff problems
- Accounting and auditing techniques

A review of these section headings indicates the very practical nature of this "how-we-do-it" handbook. All practicing CPA's could benefit from reading the volume, or selections from it, and it should occupy a prominent place in the library of every small practitioner.

Accounting Aids to Management is a special selection of twelve articles that appeared in *The Journal of Accountancy* and deal with ways in which the CPA can make a more valuable contribution to management. The pace is set in the introductory article "Accounting and New Management Attitudes," by Robert M. Trueblood; Mr. Trueblood here challenges the accounting profession to grow, stating that "If management's interest in new attitudes involving the use of scientific and mathematical techniques continues, the accountant must extend his abilities and knowledge in order properly to perform his function."

The other articles are devoted primarily to discussions of areas for helping management. They include articles on budgeting, return on capital employed, fringe benefits, standard costs, statistical inventory sampling and the use of short-term forecasts. Not all of the selections follow the lead set by Mr. Trueblood's contribution, and one might feel that the title *Accounting Aids to Management* becomes all-inclusive when it covers a discussion of the question of rotating auditors. In general, the volume contains information of interest to both accounting and management personnel.

J. R. Jones

Arthur Andersen & Co.
Atlanta, Georgia

H. A. Finney and Herbert E. Miller, *Principles of Accounting—Intermediate* (Fifth Edition). (New York: Prentice-Hall, Inc., 1958, pp. xvii, 955, $7.95).

Two major changes characterize this most recent revision of *Principles of Accounting—Intermediate.* The first, and most important, concerns itself with a marked expansion and strengthening in the presentation of modern accounting theories and their applications. The second represents a change in the emphasis given to certain sections of the fourth edition. Both of these changes tend to substantially advance the level of the material within the book. This edition, seven years in the making, truly sets new and higher standards for textbooks in accounting theory.

The additional emphasis upon essential accounting theory is partially accomplished with the addition of entirely new chapters on Income Tax Allocation, Price-Level Impact Upon Financial Statements, Cash-Flow Statements, Statements from Incomplete Records, and Business Combinations and Divisive Reorganizations. Other chapters on Generally Accepted Accounting Principles, Financial Statements, and Net Income Concepts and Correction of Prior Years' Earnings have been completely rewritten. All the chapters reflect recent accounting literature, and the authors include the point of view of the American Institute of Certified Public Accountants and the American Accounting Association whenever available. In controversial areas several opinions are often presented and defended with adept applications of basic accounting theory.

The basic chapters on balance sheet accounts have been updated but the actual contents incorporate only minor revisions. Academicians will appreciate the expanded treatment afforded to the cost or market and LIFO inventory theories. Accelerated depreciation methods have also been given a more extensive treatment in line with current day practice. A new working paper technique has been developed for preparing statements of applications of funds wherein the preparer can briefly describe each fund transaction as it is extended. Since a great deal of the transitional material has been eliminated from the chapters dealing with stockholders equity, it may have been better to place these chapters after the chapters on assets and liabilities.

The second major change—relating to the emphasis placed upon various topics—will probably stir some controversy in the teaching profession. The space allocated to a review of elementary accounting procedures and basic corporation finance material has been reduced to an absolute minimum. Some teachers will claim that this reduction in background material will hamper their efforts to bridge the gap between elementary and intermediate accounting courses. Other teachers, who already have reduced the emphasis placed upon transitional material in the earlier edition to make way for a penetrating study of the more controversial subjects, will welcome the change. These reductions have been skillfully handled by the authors and the resultant material appears to be adequate. An interesting point is that even though the theoretical aspects of the book have been materially amplified, the fifth edition contains twenty fewer pages than the fourth. The long chapter in the fourth edition covering Cash and Receivables has been expanded into individual presentations. Separate chapter status has also been afforded to

Cash Flow Statements and Statements from Incomplete Records. This latter chapter on statements from Incomplete Records could be improved by tying the example together with an adequate working paper analysis of the complete problem.

The two new chapters on Income Tax Allocation and Price Level Impact on Financial Statements are lucid and very timely. The material is handled in summary fashion and is written at the undergraduate level of comprehension. The able students, however, will be stimulated to go beyond a mastery of the techniques to a critical review of recent trends in accounting theory. Similarly, the chapter on Business Combination and Divisive Reorganizations will acquaint the users of the text with the modern day complexities of business organization. This latter material, however, should logically have been included in the revision of the *Principles of Accounting—Advanced* text along with the general area of consolidations.

The intensification of the theoretical material within the book is emblematic of the increasing demands being placed upon accountants for reliable as well as meaningful financial information. The authors are to be commended for this bold step forward in the intermediate accounting theory field.

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Herman C. Heiser, *Budgeting, Principles and Practice* (New York: The Ronald Press Company, 1959, pp. x, 415, $10.00).

Budgeting, Principles and Practice is a "practical treatise on budgeting" directed primarily for the use of experienced managers, budget directors and their staffs, and for the professional accountant and consultant. The book focuses its attention on management uses rather than on routine mechanical aspects of budgeting. It is also designed to serve as a possible college text on budgeting. The former objective, in large part, explains the choice of material, while the latter guides the organization of the book.

Budgeting is well written and logically organized. It is divided into three parts: I. Budgeting for Planning and Coordination, II. Budgeting for Control, and III. Budgeting and Controlling Techniques. The first two parts follow fairly closely the conventional theme that planning, coordination, and control are the functions of business administration. Budgeting and budgetary control procedures are then fitted into this framework. In the chapters on organization for budgeting and the preparation of budgets, the author follows a handbook style, outlining in some detail actual companies' procedures and practices. Included, also, is a chapter on profit-planning of the usual variety with stress placed on break-even type analysis. Some attention is paid to rate of return on investment criteria.

Part II, Budgeting for Control, consists of three chapters: one on reporting and analysis of variation, one on flexible budget allowances, and the third on analysis of cost variances. These chapters give the essence of budgetary control and illustrate the procedure with an analysis of the previously prepared illustrative company budget. In the chapter on flexible budget allowances, several simple examples of cost to activity relationships are given together with methods for fitting trend lines.

Part III, covering approximately 50% of the book, is devoted to detailed study of techniques in ten major categories of income and expenditure. It concludes with chapters on budget revisions and alternative budgeting procedures. In discussing detailed techniques the author draws heavily on actual company studies recruited mainly from the *N.A.A. Bulletin*, as well as on his own wide experience. Here the author has done a good job of describing budgeting techniques as they are currently practiced (with due allowance for the three or four year lag "in process of publication").

The reviewer believes that the author has ably achieved his major objective of providing a "practical treatise on budgeting." One must, however, regret that the author did not broaden his scope to provide a work of the type hinted on p. 350 where he states,

> "It should be evident to the student of budgeting that a properly designed budget is a model of the business system of the enterprise and, consequently, could be used to simulate the effect of managerial decisions *before* they are made. The use of an electronic computer with its logical abilities and operating at electronic speeds may make it feasible to employ simulation techniques extensively in the company of the future to improve its decision-making function."

For textbook purposes the book would undoubtedly be deficient, since there are no problems or practice case materials, unless it were to be supplemented later by an adequate work book.

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Arnold W. Johnson, *Auditing: Principles and Case Problems* (New York: Rinehart & Company, Inc., 1959, pp. x, 684, $7.50).

Auditing: Principles and Case Problems is a revision of the author's *Principles of Auditing*, originally published in 1955, and a consolidation of that text with his separate *Case Problems in Auditing* (New York: Rinehart & Company, Inc., 1950, pp. x, 259). The consolidation of these two volumes in one text overcomes a shortcoming of the previous *Principles* text, which did not contain any questions or problems for student assignments.

The preface indicates the author's intention to have the book serve as an authoritative text for students planning to enter the public accounting profession and for students whose careers in business will be enhanced by a good understanding of the fundamentals of auditing. In addition the book is intended to serve as a guide for young accountants in practice and also as a reference book for professional auditors. These objectives appear to be too diverse to accomplish success-

fully in textual material of less than 350 pages. While each of the objectives are met in some respects, an overall evaluation indicates that none of the objectives are met in full.

The book is organized into eighteen chapters, fourteen subdivisions of case problems, and two appendices. The first three chapters deal with the general nature and objectives of auditing, problems of planning an audit, and internal check and control. The next eleven chapters discuss audit procedures and accounting problems arising in the verification of the balance sheet and income statement. These chapters also include the presentation of illustrative working papers. The following three chapters deal with the preparation of audit reports. Chapter 18 considers the application of statistical methods to auditing procedures and was written by John Neter of the University of Minnesota. The case problems are organized to coincide with the chapter presentations. Appendix A is devoted to the presentation of a detailed audit program, while an internal control questionnaire is presented in Appendix B.

In general, the text approaches the subject of auditing in the traditional manner. References to other textbooks and to current literature at the end of each chapter, and the absence of long lists of detailed audit procedures are two advantageous features. Likewise the final chapter on statistical methods presents forward-looking information in an interesting and understandable manner.

If the book is considered from the point of view of the beginning student of auditing, several weaknesses are apparent: (1) Lack of a clear distinction between the client's responsibility and that of the auditor. Thus, accounting decisions made during a period are those of the client, and the auditor is primarily responsible for a review of these policies and a decision on their applicability. This distinction could be more clearly drawn. (2) Misrepresentation on the degree of correctness which an auditor seeks in his verification of financial statements. Frequent references using "correct" and "incorrect" are disturbing. The necessity for exercise of sound judgment and the objective of reasonableness in the review are not emphasized sufficiently. (3) Lack of clarity in the use of the term "audit report." The term is used to refer to the so-called auditor's certificate, the long-form report, and even to the financial statements. Frequent references are made to disclosure of certain audit procedures, or the absence thereof, in the "audit report." The particular type of "audit report" referred to is not made sufficiently clear. (4) Undue discussion of accounting "principles." Several chapters, particularly chapters 9, 10 and 13 are primarily discussion of accounting matters with very little of an auditing nature discussed. Likewise, the material on audit reports in Chapters 15 and 16 is largely repetition of material normally considered in other courses or textbooks. (5) Tone of Chapter 3 on internal control. This chapter is largely a compilation of facts about internal control, a listing of what "should be" done. Few reasons are presented to support the facts, and no philosophical presentation of internal control features is attempted. An opportunity was missed to treat this important and difficult area in a progressive and forceful manner.

Chapter 18 is an excellent presentation of some of the concepts of scientific sampling. However, if this discussion were included earlier in the text, the principles developed could be interwoven into the chapters on verification. As it is, the chapter strikes the reader as being an appendix to the basic presentation.

In general the problem materials are good. Considerable variety is available, although the number of problems requiring work sheet analysis could be increased in a few sections. On the whole the problems are thought-provoking and make good points of departure for class discussion.

The book falls short of meeting the ambitious objectives which were intended. In addition, the other shortcomings noted are serious enough to detract from the effectiveness of the overall presentation.

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C. AUBREY SMITH AND HORACE R. BROCK, *Accounting for Oil and Gas Producers* (New York: Prentice-Hall, Inc., 1959, pp. xvi, 536, Price $8.00).

The many accounting problems combined with diverse accounting practices within the petroleum industry have long discouraged general writing within the field. In recognition of a definite need, Messrs. Smith and Brock have, in *Accounting for Oil and Gas Producers*, written a book which will be of interest in the petroleum industry, in public accounting practice, as well as in the college classroom as text material.

The authors have done an excellent job of organizing and presenting a complex and often controversial area of accounting. Where alternative procedures exist such variations have been set out, described, and generally ranked on a basis of accepted accounting theory and experienced judgment. The style of presentation is clear. The terminology is non-technical for a subject such as this.

The 504 pages of text material—24 chapters—is followed by 18 pages of appendix containing illustrative typical contract forms.

In order to supply the reader with a background of knowledge and understanding of problems and practices existing within the petroleum industry, the authors have devoted the first five chapters to economics of the petroleum industry, geological and geophysical activities, drilling operations, special contracts, and company organization. Further discussions of industry practices are found throughout the book, and are presented parallel with discussion of accounting concepts, practices, and procedures.

In view of the ever-changing and complex nature of income tax laws and regulations applicable to oil and gas production the authors have not attempted to cover this area of accounting and tax practice. They have in Chapter 6 reviewed accounting concepts of the industry and pointed out differences between income tax treatment and generally accepted accounting theory in such matters as intangible drilling and development costs and allowable depletion, and the results of these differences in terms of accounting record keeping.

Chapter 7 presents illustrative charts of accounts for both the small and the large operator, together with typical journal and ledger forms. Adequate explanation accompanies this material. The use of clearing accounts and account coding is explained.

Property Interests and Special Contracts is the title of Chapter 8. Agreements peculiar to the industry described in this chapter include a variety of contracts resulting in the acquisition of leases. Development and operating agreements are reviewed. These include "farm outs," "net profits interests," "carried interests," "free-well agreements," "payments out of oil," and "ABC agreements."

Chapters 9–14 contain a very thorough presentation of accounting problems and procedures growing out of the acquisition and operation of plant and equipment. Chapter titles in this area are: Undeveloped Properties, Geological and Geophysical Expenditures, Amortization and Disposition of Undeveloped Properties, Developing and Equipping Producing Properties, Authorization for Expenditures, and Incomplete Construction Accounts. Illustrations and journal form entries are used extensively. Diverse practices are set out and commented upon.

Accounting for revenue and expense items receives careful attention in the five following chapters. Subjects are: Revenue from Oil and Gas Production, Cost of Crude Oil and Gas Produced—Cost of Finding, Depreciation of Plant and Equipment, Depreciation and Depletion of Producing Properties, Accounting Problems in the Transfer of Oil and Gas Properties.

Chapters 20 through 22 are devoted to discussion of Joint Operations on Jointly Owned or Unitized Properties, Special Problems in Producing Natural Gas, and Allocation of Producing and Finding Costs to Crude Oil and Gas. Two additional chapters round out the material: Financial Budgets and Forecasts, and Financial Statements and Internal Reports.

Appendix A (Procedures' 88 Form of Oil, Gas, and Mineral Lease), Appendix B (Forty-Acre Pooling Clause found in Producers' 88 Form Lease), Appendix C (Six-Hundred-Forty-Acre Pooling Clause found in Producers' 88 Form Lease), Appendix D (Three-Hundred and Thirty Foot Offset Clause found in Producers' 88 Form Lease), Appendix E (Rental Clause of Development 88 Lease), Appendix F (Accounting Procedures—Unit and Joint Operations), contain additional information and forms which should be of value and interest to users of the book.

Questions and problems for classroom use are available in a separate booklet.

In summary, it is the opinion of this reviewer that *Accounting for Oil and Gas Producers* is timely and will fill a very definite gap in available text and reference material on the subject. It should be well received by the industry and the practicing accountant alike.

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SPECTHRIE, WALDO SAMUEL, *Industrial Accounting, 2nd Edition*, (Englewood Cliffs: Prentice Hall, Inc., 1959, pp. xxi, 583, Price $7.50).

The preface of this volume starts with the statement —"This book is intended for business, liberal arts, and engineering students who wish, in a single course, to gain an understanding of the principles, processes, and executive uses of both general and cost accounting." This is an ambitious objective for the time allowed. The reader acquainted with the subject matter is frequently impressed with the high degree of selectivity that has been necessary to cover the broad objectives and by the distinction between a "brief exposure" and an "understanding" of many phases of the subjects discussed. The organization of the material is excellent, and the author has used the sound pedagogical and time-saving method of completing his discussion of a particular subject without intervening digressions.

To accomplish the stated objectives, the material in the text falls into three sections, namely; accounting principles, proprietorship accounting, and cost accounting. The accounting principles section includes 13 chapters using the balance sheet approach and well-organized group analysis of transactions for debits and credits. Journalizing is approached from the general journal and is largely a "how" discussion. The short chapter on the trial balance is well done. All the end of the period adjustments are discussed in one chapter, so the student may get an over-all picture of the process. In the beginning sections of this chapter differences between the cash basis of accounting and the accrual basis are presented. The opening statement on accrual accounting is: "On the accrual basis of accounting, *revenue is recorded when it is earned and expense is recorded when it is incurred*, the net income or loss for a period being the difference between the revenue earned and the expense incurred. The time of collection of the revenue or payment of the expense is not a factor." On the following page the adjustments are listed as: "1. Accrued expenses, 2. Accrued income, 3. Expenses paid in advance, 4. Revenue collected in advance, 5. Depreciation, 6. Bad debts." It would seem that from the standpoint of organization and terminology the points could be more effectively stated—to wit: 1. The unqualified statement that "revenue is recorded when it is earned and expense is recorded when it is incurred," is only partially correct and, aside from this, it tends to direct the student's attention to the routine bookkeeping process when, at this point, the objective should be the amounts included in the final balances of the revenue and expense accounts; 2. The net income for the period is not the difference between "the revenue earned and the expense *incurred*." The net income is the difference between the revenue earned and the expense *used* during the period; e.g., the basis for many adjustments is expense which has been "incurred" (entered) and not entirely used; 3. "The time of collection of the revenue or the payment of the expense is not a factor." This is obviously a statement of fact. However, if the time of collection or payment is not a factor, what is the logic of classifying certain adjustments as "paid in advance" or "collected in advance"? Under such a classification, and adhering to the strict meaning of the terms, what would be the classification of the many expense items purchased during the closing month of a period, charged to the appropriate expense account, and credited to vouchers payable, e.g. 10,000 gallons of fuel oil, a carload of shipping cartons, et cetera, et cetera? If only 10% of

of these items had been used by the closing date, would the 90% be carried as "prepaid," while the 100% is included among the liabilities?

The closing entries are discussed in the chapter on work sheets. There is no explanation of reversing entries. The balance of this section includes an excellent chapter on "Financial Statements," followed by chapters on cash and bank reconciliations, control accounts, promissory notes, asset and expense expenditures, and depreciation.

The second section of the text, which is devoted to proprietorship, covers seven chapters. These start with one on orientation and this is followed by one devoted to the entries for sole proprietorship and partnerships. The treatment of partnership is very limited. For instance only the briefest reference is made to profit distribution or to the problems of partnership terminations. The last five chapters of this section are devoted to corporations and cover the subjects of capital stock, retained earnings, capital surplus, dividends, and long-term debts. The author has covered a vast amount of well-selected material in the 87 pages. Of necessity, it flows rapidly with short pithy sentences which will require thoughtful concentration on the part of the student. There are places where one could wish for a little more discrimination in terminology. On page 229 the following statement is made, "When a *subscriber* to shares of a corporation has fully paid for them, the company issues to him in evidence of his share ownership a *stock certificate*. Shares represented by *stock certificates* in the hands of their owners are termed *issued shares*." On page 231 the statement appears, "The pledges of investors to purchase the shares of a corporation are termed subscriptions.—If the Bell Corporation receives on August 4 subscriptions at par to 400 shares, the entry is:

Subscriptions Receivable............40,000
Unissued Capital Stock.............40,000"

Capital stock is either issued or unissued. To state that the stock certificates will be issued when the stock is fully paid for and then to credit the Unissued Capital Stock account as soon as a subscription is received seems to be something of an anachronism.

The third section, devoted to cost accounting, includes 15 chapters (260 pages). Except for some variation in the latter chapters, the discussion is very largely in terms of job cost procedures. The beginning chapters are devoted to orientation, materials, and labor. The discussions of materials give some attention to the pricing problems involved in LIFO and FIFO, and average costs are mentioned briefly. No reference is made to moving averages or weighted averages or to situations where these methods might be appropriately adopted. In the labor chapter no reference is made to the handling or disposition of the employer's contribution to compensation, unemployment, or old-age insurance. However, it is clearly brought out that it is the premium payment which is the cost accountant's problem in handling overtime—not the total amount paid for the overtime hours and that this premium should be a direct or an indirect charge in accordance with the conditions which made the overtime necessary. This is a point which is inadequately covered in some texts.

Five chapters are devoted to indirect manufacturing expense or "burden." The presentation is surprisingly complete for a text of this type and interestingly although tersely presented. The material covers the nature of burden, its accumulation and distribution, actual and normal rates, control, and under and overabsorbed burden. In presenting the distribution methods the author selects hours of productive labor as a "practical and accurate measure of productive capacity." Although "direct labor cost" and "prime cost" are discussed briefly and at another point there is a short mention of the machine hour rate, the majority of the discussion is tied to direct labor hours. In defense contracts and in industries with a large percentage of hand labor, this is appropriate; but with the trend toward automation, there may be some question as to this treatment. However, when the student clientele is considered, there may be a pedagogical advantage.

Following the discussion of job order costing, there is one chapter each on process costs, residuals and by-products, joint products, and the use of cost information in the formulation of business policy. The material on process costs is of necessity rather brief. The other three chapters contain valuable and interesting information. The only question is, with the pressure at the end of the year, will there be sufficient time for the proper development of this material, particularly that contained in the last chapter?

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SPICER AND PEGLER, *Book-keeping and Accounts*, 15th Edition (London: H. F. L. (Publishers) Ltd., 1959, pp. xi, 615, Price 35 shillings).

The author of this book review feels highly privileged in being asked to examine this volume and to present ideas such as a reviewer usually observes in his careful scrutiny of the work of a contemporary.

It seems that the names of the two principal authors (Spicer and Pegler) have prevailed throughout the 45 years of publication, both on the back cover and on the title page. The names of the other authors, however, have been changed. Those whose names appear as signatories in the Preface to the Fifteenth Edition are W. W. Bigg, H. A. R. J. Wilson, and A. E. Langton. Names of authors and co-authors of the intervening editions do not appear in any convenient form, but it is presumed they might be easily obtained from the other thirteen prefaces not cited above.

The high standing of the textbook, especially in English-speaking countries, is evidenced by numerous editions and impressions printed. The list following is copied from the supplementary title page of the Fifteenth Edition.

	Year	**Interval*
First Edition...............	1908	
Second Edition.............	1910	
Third Edition...............	1913	
Fourth Edition..............	1919	6
Fifth Edition...............	1920	

* The list here reveals the number of years that elapsed between editions, ignoring intervals of less than four years.

	Year	*Interval*
Sixth Edition	1924	4
Seventh Edition	1927	
Eighth Edition	1931	4
Ninth Edition	1934	
Tenth Edition	1938	4
Eleventh Edition	1945	7
(Second Impression)	1946	
(Third Impression)	1947	
Twelfth Edition	1950	5
Thirteenth Edition	1952	
Fourteenth Edition	1956	4
(Second Impression)	1956	
(Third Impression)	1958	
Fifteenth Edition	1959	

In examining textbooks similar to the one now under consideration one should naturally attempt to evaluate the supplemental educational and nuisance values attached to the foreign exchange elements that arise if the book is to be used in non-English speaking countries. It happened that in 1908 courses in the field of accounting were just beginning to receive recognition in the universities of the U.S.A. This reviewer was graduated from the University of Illinois courses in Commerce in 1908, which was the year in which the Spicer and Pegler book was in its first edition.

There was also a dearth of satisfactory or good textbooks on accounting available for classroom purposes in the U.S.A. in the period 1900 to 1917. As part of an informal compilation of material the teacher usually prepared a list of monetary units and their equivalents in foreign coinage. The students were required to learn them.

The question was frequently raised about the relative value of the good text material in Spicer and Pegler and the apparent waste of time in using pounds, shilling and pence in the accounting procedures and descriptions.

From evidence brought to our attention from time to time we feel the use of the text with pounds, shilling and pence liberally sprinkled through the book was justified by the results obtained through the use of a text which seemed to guide the teacher into some excellent selections of topics and methods of treatment.

From our familiarity with textbooks in accounting and also in some other fields, we feel there is a unique situation in the review of the fifteenth edition of Spicer and Pegler's Book-keeping and Accounts. The case is unique in that (1) The reviewer taught the Third Edition of this book to a class of sophomores in 1915 at the University of Illinois. (2) It was the first time that such a large group of students in the U.S.A. had reported as using a book in accounting, the prose and problems of which were confined exclusively to British pounds, shilling and pence or other foreign currency. (3) A fine opportunity was given to compare the contents of early editions (especially the third), to observe trends in the use of modified principles and problems over a span of fifty years, and to test the effectiveness of the idea that "what is, is wrong" when applied to textbooks of a scientific nature.

Several specific paragraphs and problems are compared in the third and fifteenth editions to illustrate the fact that one who can distinguish readily between fundamental principles and meticulous details, can tell when progress is being made and when laziness catches up with the author and finds him merely copying his earlier textbook. Similarly, we can justify the use of illustrative problems from previous editions as long as they have satisfactory functions.

In the next several pages we shall attempt to compare mere titles and topics of prose material and of problem material in the Spicer and Pegler third edition (1913) with the fifteenth edition (1959).

The Capital of a Partnership. Several paragraphs under this title have identical contents in the third and fifteenth editions. Only one short paragraph is quoted here from Edition 15. Many more cases of similarity might be quoted from this chapter on Company Accounts. We shall use at this point only the following which might be under the caption "The Capital of a Partnership," page 153, §8 or page 192, Ed. 15, §9: "The Capital of a Partnership is contributed by the partners according to agreement, and is not necessarily fixed in amount, being frequently increased by undrawn profits, or reduced by losses sustained; whereas in the case of a Company, the authorized capital is fixed by the Memorandum, and cannot be reduced without a special resolution and leave of the Court; except by resolution of the Company in general meeting."

Shares of No Par Value. So many business concerns were affected by the Companies Acts of 1862 to 1907 and their successor, the Companies (Consolidation) Act, 1908, that authors of accounting textbooks felt it was necessary to recognize new laws by the creation of new accounting and auditing theories and practices. In the case of no par value shares of stock in a corporation the Spicer and Pegler text gave only minor recognition in the early editions but in the later editions it took the form outlined below in the legal and financial cycles; as quoted from page 208 (1959 Ed.) "In the U.S.A. and other countries shares of no par value have been quite common for many years and there has recently been growing support for amendment of the Companies Act of 1948 to permit the issue of similar shares in this Country.[1] A committee was appointed by the Board of Trade to study the matter and report thereon."

A tentative report included these two sentences: "Given these safeguards, the committee concluded that shares of no par value would be neither more nor less open to abuse than shares having a nominal value. At the time of writing, no steps have been taken by the Government to implement the committee's recommendations."

Purchase of a Private Business by a Limited Company. The authors of the 15th Edition (and we assume those of the 3rd Edition also) used at least one problem under this title carried down through the 14 revisions. This situation was revealed by comparing the intervening editions.

Bonus Shares. The treatment of Bonus Shares was the same in the 1914 and 1959 Editions, indicating little if any change in the Company Act.

[1] Meaning Great Britain

Miscellaneous Topics. Other topics covered in the 1959 Edition which seem to have no fundamental changes in the period 1914 to 1959 are:

Payment of interest out of capital
Preparation of a company's books and accounts for audit
Double account system
Bankruptcy, dead rent, and the treatment of repairs, renewals and replacements. The latter group of three items represents a sectional heading entitled "Depreciation, Reserves, Sinking Funds, etc." The opening paragraph of the section heading in the 1959 edition is identical with that of the 1914 edition.

It is interesting to see how economical of time the authors and co-authors have been in compiling the fifteenth and earlier editions. They have recognized that a good illustrative problem in 1913 (third edition) can also be a sound one in 1959 if the fundamental principles in the textbook are supported and used.

A few random samples of illustrative problems examined in the third and fifteenth editions show that illustrative problems, used in the third, were used also in the fifteenth edition. There could be a strong presumption that the same problems might have been used also in *all* the intervening editions. Most readers of a review of this type will undoubtedly approve such usage of "old problems" since the partnership laws (statutes and court decisions) have not tended to reflect material changes in partnership, or corporation finance.

In keeping abreast of the times, the composers of the fifteenth edition of Spicer and Pegler have chosen wisely to emphasize mechanized accounting. The emphasis is reflected in a twenty page chapter with reasonable attention being given to principles, writing and copying, adding and calculating, ledger posting, punched card and electronic computers.

In the first twenty years of the twentieth century large industries requiring millions of dollars for construction and operation caused corporate organizations to expand and to create accounting problems not previously encountered. Among the most common devices were the holding company and the consolidated financial statements. Spicer and Pegler assisted in meeting the challenge for the accountants by including fifty pages of material on "The Accounts of Holding Companies" in Chapter IX.

It seems that an editorial balancing problem arose as between "Holding Companies" and "Cost Accounting" as chapter headings. While emphasis on holding companies was increased between 1913 (third edition) and 1959 (fifteenth edition), that on cost accounting decreased. Using a competitive sports terminology we might cite the fact that in the span of years just mentioned, cost accounting lost 28 pages of material, and holding companies as a topic gained 46 pages.

These citations relating to contents of the textbooks are offered chiefly to show that the authors of the book under review are trying to keep the contents up-to-date with material either factual or controversial.

Such similarity in ideas, phrases, or words in two related editions of a book is criticized by some writers as revealing laziness or carelessness in the use of available quotable material.

We have been glad to review the Spicer and Pegler book because there is a large amount of evidence from edition to edition which reveals that the several authors and co-authors have been real students in examining the scores of scientific postulates in the first fourteen editions. They have shown rare patience and judgment in deciding which ones to omit from the fifteenth, which ones to modify in part, and which to carry forward verbatim without fear of being considered ignorant of what now constitutes progress in a chosen field. The authors reflect a keen appreciation of the valuable increments which do not become useless merely by lapse of time.

Some of the other topics covered in the fifteenth edition have been carried forward through earlier editions, but with justifiable changes in meaning, or effect on financial statements.

The reader should be cautioned that the spelling of some words is optional for citizens of Great Britain and the U.S.A. Typical of the group thus observed are realisation, summarised, cheque, and others chiefly in the "s" vs. "z" classification. It also should be remembered that the Balance Sheet in Great Britain has assets on the right and liabilities and capital on the left.

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Economics

Chandler, Lester V., *The Economics of Money and Banking* (New York: Harper and Brothers, 1959, pp. xv, 549, $6.50).

Although the author disclaims an intention to present a comprehensive coverage of the field of money and banking, the third edition of *The Economics of Money and Banking* is an entirely adequate and complete treatment of the basic material.

Using chapters as major divisions, Chandler treats consecutively an introduction to the elements of money, the character and development of American banking institutions, monetary theory, national income theory, an integration of national income and monetary theories, financial institutions including the monetary functions and institutions of the federal government, international monetary policy and international financial operations and institutions.

Professor Chandler orients the educational objective of the study of money and banking in the broad field of economics. The basic problem lies in the interrelations of cause and effect between monetary conditions and monetary policy on the one hand, and economic developments as a whole, on the other. Money is treated as a product of social systems as well as a necessary tool of the social processes of specialization and

exchange. Moreover, money is important in private enterprise countries from the point of view of economic motivation. Money flows influence motivations to produce, to invest.

Throughout the text the author strives to keep a proper balance between the function of money as an economic determinant and its limitations in that regard. Money is of inescapable importance but it is by no means the only important economic factor.

"Monetary theory does not limit itself to analyzing the economic effects of influences 'originating on the side of' money and monetary policy. . . . But all valid monetary theories recognize that money and monetary policy are not the only important determinants of the behavior of the economy and that many changes originate in nonmonetary factors. . . . " There is also an interest in and a concise summary of the historical developments of monetary theory and policy in the United States to which the writer devotes four chapters. This exposition includes the integration of monetary and fiscal policy together with a clear presentation of continuing problems and unanswered questions.

Certainly the author accepts governmental jurisdiction over the money institution. In a sense the text comes to a focus in the current question of monetary and fiscal control as a means of providing full employment without inflation. If this question is not answered conclusively, at least the elements relevant to its study are adequately presented and explained. Having led the reader through a descriptive explanation of the basic monetary functions and the present day institutions of finance, the author examines at some length the questions of national income determination. Five chapters are given to the consideration of the four functions which combine to determine "the level of the money value of national output or income and the level of interest rates." These functions are (1) the investment demand for output, (2) the supply of saving, (3) the supply of money, and (4) the demand for money. Following this discussion is a brief history of United States monetary policies from 1914 to the present including carefully selected materials rich in statistical data. However, the historical description is not specifically related to the preceding theoretical explanation. Perhaps it is too much to expect a textbook to enter into an evaluation so extensive and so controversial. At any rate, it is at this point that the instructor using the text may find an opportunity to combine a study of past national monetary policies with national income consequences.

The current domestic problem is identified both as a choice of objectives and a conflict in theory. "How should we balance the objective of promoting price stability against that of promoting 'maximum employment, production and purchasing power' and the 'highest sustainable rate of economic growth'?" There is some cause for optimism in the effectiveness of automatic variations of government revenues and expenditures but Professor Chandler is not so optimistic about the willingness of legislators and government officials to use positive methods of either fiscal policy or monetary policy. Of the two approaches, however, he feels that monetary policy is more likely to bear the major burden, at least in the early stages, of either inflation or recession. During recessions it is the major purpose of monetary policy "to entice the community to spend more for output. In times of actual or threatened inflation it is to restrict spending. This cannot be achieved without restricting somebody, and who is restricted from doing what he wants to do is not always properly appreciative." But the evils of no restrictions are outweighed by the consequences of eliminating all restraints. The objective should be a logical selectivity in the application of policies of contraction and expansion.

The scholarly excellence of this book is quite in line with the other works of Professor Chandler. In addition to being a top ranking textbook, it will be a valuable addition to the libraries of statesmen, financiers, or the intellectually curious lay person.

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Ilse Mintz, ***Trade Balances during Business Cycles: U. S. and Britain since 1880*** (New York: National Bureau of Economic Research, Inc., Occasional Paper 67, 1959, pp. 99, Price, $1.50).

This study deals with the relationship of American and British trade balances (from 1880 to 1955) to "national and international business cycles." More specifically, the paper is largely concerned with the impact of business cycles on trade balances, although in the closing paragraphs the author discusses the opposite relationship: the effects of trade balance fluctuations on business cycles via monetary reserves.

While the study is concerned mainly with the behavior of American trade balances, the cyclical behavior of British trade balances is analyzed for comparison with American experience. The periods when business and foreign trade were disturbed by wars are omitted. Trade balances are defined as the value of exports of merchandise less the value of merchandise imports. Service transactions are not included because of lack of data prior to the 1920's. It is demonstrated, however, that fluctuations in service balances seldom offset changes in trade balances in either the United States or Great Britain. The method of cycle analysis as described by Arthur F. Burns and Wesley C. Mitchell in *Measuring Business Cycles* is used.

While recognizing the lack of agreement on the concept of an "international economy," especially the question as to whether this economy has fluctuated sufficiently in unison to justify the concept of a world cycle, the author develops a world cycle chronology for the purpose of analyzing foreign trade. After experimenting with three quarterly and one annual series, all of which showed cyclical swings, Mintz chose the turning points in world imports. For those interested in statistical methodology, a discussion of the reasons for this choice and a detailed description of the construction of the series are given in Part IV of the study. For analyzing U. S. trade balances, turns in imports of the world outside the U. S. are used, while for British trade balances, use is made of turns in imports outside Great Britain. By using these turning points in combination with domestic business cycle reference dates, domestic cycles

of the two countries are subdivided according to the simultaneous world cycle phase. Four phase-combinations are thus distinguished: domestic expansions which coincide with world expansions (co-expansions); domestic expansions which are accompanied by world contractions (counter-expansions); and similarly for domestic contractions, co-contractions and counter-contractions. The author admits the use of world turning points in world imports does not represent a "truly international cycle" and that a world cycle defined differently might well be preferred for other types of international economic analysis.

As a result of the study, Mintz found that trade balances of both countries fluctuated cyclically during the period covered. The swings in the trade balances in both the United States and Great Britain were related to domestic business cycles. In the later stages of business expansions and at the beginning of contractions it was found that trade balance changes were more closely related to business cycles than at other times and, furthermore, this was true whether the balance pattern was positive or inverse.

The American balance showed inverse conformity to domestic business cycles, i.e., "it rose more (or declined less) when American business contracted than when it expanded in twelve of fourteen cycles, 1879 to 1938, and again 1949 to 1956." The British balance, on the other hand, was characterized by high positive conformity in the 33 years before World War I. In the interwar period, and after World War II, the British balance has behaved cyclically as the American balance, i.e., it has shown inverse conformity to swings in British business. The author points out that the findings conflict with the view that the effect of cyclical fluctuations on a country's foreign trade balance depends upon the degree of industrialization. If this is true, how can the different behavior of the British balance before and after World War I be explained, since Great Britain was highly industrialized in both periods?

The findings should clear up certain contradictions in economic literature in which some writers have held that British trade balances have improved during prosperity, others that they have deteriorated, and still others that trade balances have shown no cyclical fluctuations. The contrast in behavior of British balances relative to domestic business cycles before and after World War I indicates that findings about either period should not be applied, without careful consideration, to the other.

According to the author, the use of world import cycles "shed far more light on foreign trade cycles than their crude nature would have led us to expect and than can be obtained from the use of the national framework alone." With the exception of the 1930's, during counterphases conformity of the trade balances of both countries to domestic cycles was always high. On the other hand, during co-expansions American trade balances fell in only seven of sixteen times while during co-contractions rises and declines were of equal frequencies. A differentiation between co- and counter-phases may help to explain some of the contradictory statements in the literature relative to the behavior of trade balances during the various phases of the business cycle.

Much controversy has revolved around the possibility that both the United States and Great Britain have at various times "imported" or "exported" their business fluctuations. This paper helps to fill a gap in the empirical backdrop against which more realistic studies of trade balances, business fluctuations, and their interrelationships may be made.

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Finance

Thomas E. Babson and David L. Babson, *Investing for a Successful Future* (New York: The Macmillan Company, 1959, pp. viii, 312, $4.95).

This book might more aptly have been entitled: "The Case for Investing in Common Stocks with Growth Characteristics." It is not, and does not purport to be an exposition of general principles of investments.

The authors have undertaken to devise an investment program which will surmount two major obstacles to accumulating wealth, namely high taxes and rising costs of living. Proof that these are long-run forces within the economy is documented in some detail but centers around "... the vesting in the federal government of responsibility for the economic welfare of all citizens and for the defense of the free world."

Not only is the investor confronted with long-run problems of conserving his savings and having them grow, but cyclical fluctuations will probably be of shorter durations and of less severity than in the past. The latter conclusion is based largely on four factors: (1) changes in our monetary system including the Employment Act of 1946, (2) business emphasis and expenditure on research and development which has replaced the land frontiers as opportunities for expansion, (3) the higher levels and redistribution of incomes which have provided new mass markets for goods, and (4) industrial development and progress abroad which provide outlets for American investments and cushions against world-wide deflation.

Confronted with these forces, it is obvious that dollar investments are not the answer to the needs of today's investors. Various types of investments are briefly considered and rejected for different reasons before the solution is presented in the form of common stocks. It is not just any class of common stock which meets the investor's needs under current economic conditions. Of the three basic types of common stocks, namely income stocks, growth stocks, and cyclical stocks, it is only the growth stock which is suggested as an investment for a successful future. Criteria are established for determining a growth situation. A number of "Promising Fields for Investment Progress" are discussed. Statistical evidence is presented to show why these fields are selected. In some instances a number of companies are mentioned which are prominent in their respective fields

and which apparently meet the requirements of growth stocks.

In the final section of the book the authors discuss financial planning in general. Here they present evidence of the superiority of investing in growth stocks over a period of years (1940–1956, and 1950–1956) compared to investing in income stock. The book presents some guides to successful lifetime investing and, finally, in the last chapter of exposition, gets around to the factors a family should consider in financial planning. Although the need for some liquidity and fixed dollar assets is presented, by the time the reader gets to this point he has been pretty thoroughly indoctrinated with the idea that anyone who holds such assets is a fool.

In building their case for investment in common stock of a growth nature, the authors place great emphasis on the expected continuation of inflation. There is little question that the long-run trend of prices, in the 20th century, has been up. There seems to be little doubt that the future trend of prices will be up. But there are forces—unmentioned in this book—which indicate that the upward trend is likely to be at a slower rate in the future than in the immediate past. Nor is there any suggestion that while cyclical fluctuations may be getting shorter and of less magnitude, fluctuations in the price of common stocks may continue and be greater than economic fluctuations in general.

While it is true that the stock market is different today than it was thirty years ago, it is by no means a sure road to future financial independence. The authors point out many pitfalls which still exist and give some general directions which should, if followed, enhance the probability of successful investing in common stocks. But the specific steps to take, the source of information, the tests of managerial ability, in short, how to make the analysis, is not discussed. While reliance on the advice of brokerage firms and "poop" sheets is discouraged, the service of "investment counsel" is advocated. Even in seeking the service of the professional analyst, however, a skeptical mind is advocated as a major attribute of the successful investor.

In stating the advantages of common stock as investment media, the authors are not always fair with other types of investments. For example, the statement is made that: "Common stocks, however, have the advantage of being earning assets" (p. 111). The same could be said of many other assets. It may be that a successful investor will find that other assets meet his needs under current economic conditions equally as well as common stocks.

In summary, the authors have built a strong case for a particular type of investment policy. In doing so they have omitted many problems which confront the average investor, they have ignored some of the forces at work in the economy, and they have overlooked some other alternative investment possibilities for meeting the same problems.

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Ronello B. Lewis, *Financial Analysis for Management* (Englewood Cliffs: Prentice-Hall, Inc., 1959, pp. xiii, 193, Price $25.00).

Most books about business administration are written by professors for the simple reason that the typical executive does not have time. Despite an unusually active business career (formerly Controller of Radio Corporation of America and Vice President and Controller of Olin Mathieson Chemical Corporation and now partner in E. F. Hutton & Company), Ronello B. Lewis has managed to make two significant contributions to management literature in two years' time. Neither book seems to have suffered from the other demands on Mr. Lewis' time. Both have benefited from his wealth of experience.

The present book forms a good companion for the earlier book, *Accounting Reports for Management*, which was reviewed in the July 1958 issue of this Review. The earlier book dealt more with the problems of reporting and evaluating past performance whereas the present volume relates to planning for the future. The earlier book contained a great deal of original material that could not be found elsewhere. The present volume has more competition (see for example the *Return on Capital* study of the National Association of Accountants), but it also contains much that is not available except in scattered articles.

The book concerns capital budgeting, and it can best be understood in terms of the three methods of computing return on investment that are widely employed. These three measures, all of which are carefully considered by Lewis, may be referred to as the accountant's method of computing rate of return, the investor's method, and the payout period.

The "*accountant's method*," or "financial-statement method" or "book-value method," to mention two other terms often applied to this method, involves computing the ratio of income shown on the income statement to investment appearing on the balance sheet. It can be computed in different ways depending on whether income is before or after tax, before or after interest charges, before or after depreciation, and so on. Similarly, investment can mean stockholders' equity, total assets, total assets less current liabilities, total assets before deduction of accumulated depreciation, total assets before deduction of accumulated depreciation but after deduction of current liabilities (Lewis' favorite), and so on. Despite this diversity, Lewis considers the accountant's method superior to the other two methods of computing return on capital. His discussion is thorough and he presents numerous detailed illustrations of the use of this method in connection with decisions about the retirement of an asset, the purchase of a new asset, purchase of a new business, merger, and adding and dropping product lines.

Lewis favors the "*investor's method*" on theoretical grounds but rejects it on practical grounds. The method is the same as that used in finding the yield on a bond. The book contains excellent illustrations and discussions which should enable the reader to obtain a much better grasp of this important method than is common in accounting circles. Its table of present value and amount

factors gives the reader the equipment to put the method into practice. Lewis states (p. 71): "From the standpoint of pure theory, the investor's method, also known as the discount method or present value method, is the only wholly accurate approach for computing rate of return over the life-span of a capital expenditure proposal."

Despite these advantages of the investor's method, Lewis rejects it because effective follow-up of the wisdom of investment decisions is difficult for two reasons (pp. 74–75): first, annual accounting reports do not provide information in the form of cash inflows and outflows and this is the form needed for a post-audit of an investor's projection of rate of return; and second, a completely accurate figure for the actual rate of return cannot be computed until the project is completed and all the cash inflows and outflows are known. With regard to the first objection, it should be borne in mind that fairly simple corrections to the income statement can be made to put it on a cash basis and thus provide the information about cash flows of the current and preceding years. Furthermore, an approach to accounting called "industrial accounting" that is described in the July 1959 issue of this REVIEW would present the financial statements in exactly the form (cash inflows and outflows) that would be necessary for easy and effective follow-up. The second reason for difficulty in following up a capital budgeting decision—that an accurate rate of return cannot be computed until the project is completed—cannot be overcome by any method of computing rate of return. Current income statements divide the total income from a project into annual segments; as long as the total income from a project is unknown the annual portions of that income are at best estimates. Accordingly, the accountant's rate of return is as much an estimate as the investor's. The investor's method would therefore appear to be a practical though not yet popular method of evaluating investments.

The *payout period* may also serve as a rough indication of rate of return. This payout period is the ratio of the cost of investment in a project to the annual cash inflows derived from the project. Thus a project requiring an initial investment of $1,000,000 and producing annual cash inflows of $200,000 per year has a payout period of five years. While this payout period is not in itself a rate of return calculation, its reciprocal serves, in many cases, as an approximation to the investor's rate of return. Thus the reciprocal of five is 0.2 or 20 per cent. If the cash inflows of $200,000 per year for the project just discussed continued for an indefinitely long period, then the reciprocal of the payout period of five years would give the correct investor's rate of return of 20 per cent. Where the life of the project is sufficiently long, selecting projects with the shortest payout period is equivalent to selecting projects with the highest investor's rate of return. If the life of the project just discussed was no greater than its five-year payout period, then there would be no income at all from the project and no rate of return on the investment. In such a circumstance, the payout period would be a worthless tool for capital budgeting as Lewis convincingly demonstrates (p. 21).

In addition to the discussion of the different methods of computing rate of return, the book contains an analysis of the importance of the incremental approach to capital budgeting, an extensive discussion of the problems involved in planning the source of funds, and some good suggestions for interdivisional pricing.

A feature of the book that is bound to be popular with the practitioner is the use of many excellent exhibits. They can be easily reproduced in blank for application to other practical situations.

No matter how you compute rate of return, if you're a controller or treasurer this book will give you a handsome yield on your investment. If you're a professor of corporate finance or controllership, your students will find it too difficult to plan the source of funds for you to use this book as a text, but you will find it well worthwhile to have your college library put two copies on the reference shelf.

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OSBORN, RICHARDS C., *Corporation Finance* (New York: Harper and Bros., 1959, pp. xv, 637, $6.50).

In content and method this text for the undergraduate student follows the line that has been typical of popular texts on the subject since 1910. The traditional range and division of subjects is included: nature of the corporation, instruments of corporate finance, capital structure, corporate promotion, marketing of securities, determination and management of income, corporate expansion, capital adjustment, and failure and reorganization.

The instructor who desires a clearly organized and well written corporate finance teaching aid to serve the purpose of a handbook, will find this work one of the best available. But the instructor who seeks an imaginative text to present the financing of corporations as a dynamic process will not find his needs met by this volume. The topic by topic approach will give the student a static and stylized image of the corporation, an image that has only limited correspondence to the functioning reality.

Obtaining new capital is a basic financing function which is governed by diverse influences both inside and outside the business since the corporation is a dynamic organization in a dynamic society. Internally, the institution's financial policy is colored by such characteristics of management as aggressiveness in research and marketing, reluctance or willingness to incur debt, and fear of dilution of equity. Externally, the corporation must adjust to the changing requirements and regulations of society and must adopt its financing to economic and other social forces that are expressed specifically in the money and capital markets. The author recognizes this point on page 141, Chapter 7, "Capital Structure—General Principles":

"Past experience has shown that the financial plan suitable for a firm will be influenced by the specific characteristics thereof and the environmental conditions surrounding the enterprise." But the discussion of this statement is traditionally segmented under such heads as: "Business Judgment Essential," "Risk a Feature of

All Business," "Desirability of Sound Structure," and "Size and Nature of Capital Requirements." While all these points are influential in determining financing, the discussion presents little integration of these separate topics with broader considerations, for example, the influence of money and capital market situations on the sale of new securities and consequently on capital structure.

Since the dynamics of long term financing are not covered in Chapter 7, this might be expected to appear in the chapters on investment banking and the security markets. But these chapters also give a topic by topic description of such segments as service of investment bankers, classification of investment banks, investment bank operation, organization of the security markets, reasons for listing and not listing, and costs and techniques of trading in securities. This segmented and descriptive kind of presentation can hardly be expected to give the student an understanding of the way different capital structure formations develop and an appreciation of the operational process of financing.

The final chapter, "Macroeconomic Aspects of Corporation Finance," shows the same lack of integration. Three-fourths of the chapter is devoted to brief discussions of such topics as philosophy of individualism, the managed economy, and the responsibilities of the Federal government. Only a few pages are devoted to the effect of these changing aspects of our society on the financing of business.

This criticism of Professor Osborn's descriptive method is not directed alone toward his book which is excellent of its type. Rather the criticism applies to a whole tradition of corporation finance texts and teaching. The field has been slow to develop a framework of theory to make possible a logical integration of subject matter. Meanwhile teaching has suffered from too much reliance on a static descriptive approach based on legal and accounting concepts. It is disappointing to see so much effort and writing skill put into a textbook that perpetuates this tradition.

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General

Gault, Edgar H., *Departmental Merchandising Results in Small Department Stores 1956–58* (Ann Arbor: Bureau of Business Research, The University of Michigan, 1959, Michigan Business Reports, No. 30, pp. vii, 104, Price $4.00).

Department stores with sales ranging from $3,000,000 to $5,000,000 in the North Central part of the country are included in this report.

"This report shows and analyzes the gradual decline in small department store profitability—a decline that has changed an annual net profit to a loss of 0.5 per cent of sales in 1959. Also included in the report is a comparison of operating data for 1928, 1937, and 1957–58; a section that points out the importance of employee discounts as a useful measure of departmental merchandise performance and another that indicates the possible use of the average departmental gross transaction as a basis for budgeting departmental sales and personnel requirements."

"For the store merchandise manager and controller this report has many valuable data for preparing merchandising budgets, for evaluating departmental merchandising performances, and for considering the use of employee discounts and average sales transactions in budgeting and evaluating merchandise performance."

J. S. L.

James Brian Quinn, *Yardsticks for Industrial Research* (New York: Ronald Press Co., 1959, pp. vii, 219, Price $6.50).

Professor Quinn tackles the exceedingly difficult problem of how to evaluate the work done in an industrial research laboratory. Although some of the evaluation techniques reported in the literature and in 58 interviews with executives active in or interested in industrial research are mentioned, the bulk of this book is a description of, first, a theoretical structure which is set forth as the ideal basis of evaluation without regard to the cost or the difficulty of obtaining the required information, and, secondly, the modifications to the theoretical structure that are believed necessary in order to make the system practical.

The problem is divided into three parts: (1) technical evaluation, (2) economic evaluation, and (3) management evaluation.

Technical evaluation has to do with the efficiency and quality of the research work done, without regard to whether or not the results of research were used profitably. Conceptually, "efficiency" is the relationship of the actual cost of performing a research project to the cost that would have been incurred had the best possible method of attack been used. In view of the difficulty of estimating this optimum cost, the author concludes that the relationship must usually be a subjective judgment rather than a measured quantity. Quality has to do with the skill and creativity of the researchers, which also must be judged subjectively.

In discussing economic evaluation, the author stresses the desirability of distinguishing between the actual profits resulting from research, and the profit that would have resulted had the new technology developed in the laboratory been properly exploited by the sales and production organization. The latter, as measured by the present value of the stream of profit opportunities, is said to be the real worth of the research effort. The author believes that in the case of research leading to new products or processes ("offensive" research), this worth can be estimated quantitatively, but that quantitative measurements are not feasible for most types of "defensive" research (product or process improvements) or for fundamental research. For the

latter categories, however, he suggests that an order of magnitude of their worth should be "sensed"; that is, the evaluator should arrive at a "vaguely sensed magnitude of possible future cash inflows," which are then "subjectively discounted" for risk and the value of money (p. 155). These evaluations should be made project by project. The author believes that an attempt to measure the total worth of research is both impossible and unnecessary.

Management evaluation, it is suggested, should be done by comparing management actions against a check list of good management practices. The necessity for integrating the research program into the company's over-all needs is stressed.

While research managements will probably not adopt this proposal *in toto*, they may nevertheless find food for thought in this book.

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Sasieni, Maurice, Arthur Yaspan, and Lawrence Friedman, *Operations Research—Methods and Problems* (New York: John Wiley & Sons, Inc., 1959, pp. xi, 316, Price $10.25).

The Preface states: "The book is addressed to readers who have a working knowledge of the differential and integral calculus. Following the introductory material, which includes a problem-centered review of certain basic topics in probability and statistics, each chapter contains (1) the general theory and techniques of a particular problem area in operations research, (2) a number of completely solved problems demonstrating these techniques, and (3) a number of problems for the reader to solve, some with answers."

"This work can serve as a textbook for a one-semester introductory techniques course, at either the graduate or the advanced undergraduate level. Because of its intermediate mathematical level and wide scope, it could also be used profitably by students majoring in such fields as industrial engineering, statistics, economics, and applied mathematics."

J. S. L.

Thurston, Philip H., *Systems and Procedures Responsibility* (Boston: Division of Research, Graduate School of Business Administration, Harvard University, 1959, pp. x, 110, Price $2.50).

Systems and Procedures Responsibility is a study designed to determine the consequences of different approaches to systems work. The point of view taken by the book is that of the administrator who wishes to secure maximum benefits from the time spent by members of his organization in systems work. This analysis is timely in view of the current and growing emphasis on large, expensive data processing systems as well as the problems and conflicts which have arisen as a result of the introduction of these data processing systems. The importance of joint effort between line and staff personnel and between home office and operating division personnel has been magnified by the growth of companies in size and through the development of decentralized management.

The author studied (1) systems planned and installed by specialists, (2) systems planned and installed by operating people, (3) systems planned by specialists and installed by operating people, and (4) shared responsibility for planning and installation. He found an over-all need existed for the system manager to develop within his company an effective approach to systems work as well as a need to interpret to the various levels of management the best use of the company's resources in system improvement.

The findings of this study point out that the best systems result when responsibility for projects is shared at both the planning and installation stages by specialist and operating people and yet one in which leadership responsibility for execution rests with operating people. This is an excellent analysis and should interest accountants as well as administrative personnel.

J.S.L.

Wasserman, Paul, *Measurement and Evaluation of Organizational Performance—An Annotated Bibliography* (Ithaca: Graduate School of Business and Public Administration, Cornell University, 1959, pp. vi, 110, Price $3.75).

The objective of the author in preparing this bibliography was to provide a systematic reference source logically arranged and classified of the literature extant on measurement and evaluation of business and public administration as well as other fields of administrative activity such as military, education, library, and health administration.

The materials included are grouped under the following general headings:

I. Measurement and Evaluation—General and Theoretical Material
II. Measurement of the Total Enterprise
  - Business Organizations
  - Non-Business Organizations
III. Measurement of Functional Units of Organizations
  - Accounting and Finance
  - Advertising and Public Relations
  - Personnel Management
  - Production Management
  - Purchasing
  - Research and Development
  - Sales and Marketing
IV. Measurement of Individual Performance
  - General and Theoretical Material
  - Evaluation of Executive Performance
  - Techniques for Measuring Individual Effort

A careful study of the materials included and the annotations indicate that the objectives were accomplished.

J.S.L.

Rene A. Wormser, *Wormser's Guide to Estate Planning* (Englewood Cliffs: Prentice-Hall Inc., 1958, pp. xi, 175, Price $4.95).

In "A Preface Short Enough to Read" the author emphasizes that the book is concerned principally with objectives and states that: "If you don't know where

you want to go, it is hard to get there." Vying with "objectives" for principal emphasis is the topic of inflation. This topic is woven into and runs throughout the book like the background music in a television "whodunit" and is the main theme of the last chapter which is devoted to "inflation; our mad tax system; and the paternal state." The author states that in the original manuscript he had placed the last chapter first and would still recommend its being read first and then again at the end.

The reviewer is in complete accord with the author with respect to the dangers of inflation and feels that the treatment given to it in the book warrants recommending that it be read by everyone. It is stated that the present day tax system is particularly vicious so far as the middle classes are concerned; the rich have various ways of getting richer; the laboring class is concerned primarily with "take home pay"; but the squeeze between high income taxes and inflation present an almost insurmountable obstacle to the accumulation of an estate by professional men out of earned income. In addition to his grave warnings on inflation, the author has packed a wealth of estate planning experience and advice into relatively few words and in a manner which makes it easy for the lay person to read and understand.

It is pointed out that estate planning is also vitally concerned with life planning. You will have no estate to plan until you build one and advice is offered as to how a young father should go about building an estate. So far as such a young father is concerned there is no substitute for adequate insurance (which is the quickest way of assuring that he will have an estate) and the cheapest form, other than term, is recommended. "The smaller your fortune, the more life insurance you need."

The primary "objective" is first, of course, to build an estate and the book is devoted to sound advice on how to go about doing just that. At the risk of being paternalistic Mr. Wormser philosophically discusses the many problems which a young father faces and offers much business as well as tax advice. It is recognized that a young father cannot plunge into equity investments and so life insurance and a well selected home are recommended. As he is able to invest in stock he should pick those of the "blue chip" variety and also consider mutual funds.

The primary beneficiary of the estate planning of most men is the individual's wife (although Mr. Wormser recognizes that the wife ranks second in importance in the scheme of things to the individual himself) and it behooves the planner to know what kind of wife he has. Much guidance is offered in the task of ascertaining the wife's faults and virtues from an estate planning viewpoint.

The book is a treasure chest of estate and life planning ideas but its simple lay language should not be allowed to mislead the individual into believing it is a "do it yourself kit." No tax matters of consequence should be attempted without the careful guidance of one who is skilled in the field. As an example of how easy it is to be misled attention is called to page 99 where the author discusses charitable short term trusts of ten years or more as a means of saving taxes where the remainderman is the wife. No mention is made of the fact that in such a case the same thing can be accomplished with a two year trust.

Tax saving methods of all kinds are explained and the book offers good coverage on a host of non-tax subjects such as investments, occupation, retirement, residence, objectives for a wife, children, and charity, how to handle the family enterprise, and a discussion of the qualified persons who may help.

The difficulty which even the most expert of planners faces if the individual does not know what objectives he wishes to attain is stressed. One whole chapter is devoted to analyzing and planning the estate of a mythical Mr. Shad with emphasis placed on how a skillful estate planner helps an individual ascertain the objectives which make the most sense to him. A careful disclosure and analysis of all the facts in the case helps to determine the objectives. It is emphasized however that nothing should be done to save taxes which would not be done on a common sense basis without a consideration of taxes.

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Law

David S. Craig and Rate A. Howell, *Basic Business Law* (New York: The Ronald Press Company, 1959, pp. viii, 912, Price $7.50).

This text covers the standard subject matter found in offerings of colleges and schools of business in the field of business law. As a whole it is an improvement over many texts published since World War II. In the opinion of this reviewer, the textual material is concisely and excellently presented.

However, like most other recently published texts in the field, the material covered is much too comprehensive for the three-, four-, or even six-hour course. For college offerings above the first course in business law, such as business organizations, insurance, and real estate, the subject matter presented in this type of text is all too brief to permit satisfactory use of the text. The net result is that there is too much material for the first course and too little for senior or advanced courses. In this reviewer's opinion, most instructors would welcome for the first law course a text covering only contracts, negotiable instruments, and sales, or these three plus agency.

The authors have exercised good judgment in the selection of cases which is a real problem in the preparation of material for this type of text. It is no easy task to determine what cases best present business law problems when the field of selection includes the decisions from all courts of the English-speaking world over the past several centuries. In this text we find cases ranging in date from early common law down to the present

time. The instructor who finds it necessary, or is required, to cover much subject matter in the first law course will not make a mistake in the use of this text.

However, this excellent collection of cases is weakened by two flaws in presentation. First, most of the cases are pre-digested and edited to "bare bones," thereby leaving little for the student to extract from the case through his own efforts. Second, descriptive and analytical headings used above briefs are so revealing that the lazy student need ordinarily read only the facts, knowing the result from the case caption. These two methods of presentation result in "spoon-feeding" the student, when perhaps there is already too much coddling of students and too little stimulus to independent thinking.

But cases alone do not make a good text in business law. A business law text is not complete without a liberal inclusion of selected sections from both the *Restatement of the Law of Contracts* and the *Restatement of the Law of Agency*. A text should include also the Uniform Warehouse Receipts Act, the Uniform Bills of Lading Act, and the Uniform Limited Partnership Act. *Basic Business Law* does not include any of these, though it does include the Uniform Sales Act, the Uniform Negotiable Instruments Act, and the Uniform Partnership Act, all essential to a text in this field.

Unfortunately there are some inaccuracies in the textual materials, a few of which need to be mentioned. It is stated (p. 285) that the Uniform Sales Act "has been passed by the legislature of every state in the country . . . ." According to the report of Edward Thompson Company, publisher of *Uniform Laws Annotated* (1 Sales 1958 Pocket Part), the Act has been adopted by only thirty-seven states including territories and the District of Columbia. It is said (p. 286) that statements in advertisements rarely result in the formation of a contract, "for the reason that they are not ordinarily considered to be legal offers to sell." This statement gives the result as the reason. Factually the reason is that such communications do not meet the requirements of the law as to definiteness of terms of an offer to contract nor do they reasonably reflect an intent on the part of the advertiser to make an offer to contract. It is stated (p. 28) that if an offer, by its terms, can be accepted only by performing the specified act by the offeree, and the offeree performs the act, a unilateral contract results. This is an inadequate definition and illustration of this type of contract because it fails to include situations where the offeror requires or requests the refraining from an act or course of action as the acceptance. The alert instructor can, of course, take care of such errors.

No text is free of flaws. Any instructor worth his salt can teach a good course in business law with this text as a basis.

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George C. Thompson and Gerald P. Brady, *Shortened CPA Law Review* (San Francisco: Wadsworth Publishing Co., Inc., 1959, pp. 403, $5.25).

The title of this text is unfortunate because it tends to lead one to look for a watered-down digest of a vast subject. This is decidedly not the case. The authors have succeeded in their stated purpose of (1) presenting a brief, but comprehensive, review of commercial law, (2) aiding the CPA candidate in preparing for the examination, and (3) indicating the best approach to taking the examination.

An introduction, "Preparation for the Commercial Law Examination," was written by Louis A. Sigaud, the chief law examiner of the American Institute of CPAs, who goes into the coverage of the examination, the anxieties and attitudes of candidates, and suggestions for using the contents of the book to best advantage. Sigaud also contributed the final chapter of the book in which he presents an actual CPA law examination with solutions mapped out in an acceptable manner. This illustrative chapter can be invaluable because it has been observed that many candidates have the necessary knowledge but lack the ability to properly present the answers in written form.

The seventeen sections of the book are divided into two parts; Part I covering the major areas of contracts, bailments and personal property, sales, negotiable instruments, agency, partnerships, corporations, suretyship, bankruptcy, and administrative law. Part II takes in the subjects of real property and estates, landlord and tenant, wills and trusts, liens and mortgages, insurance, carriers, and accountant's legal responsibility.

Each section is followed by questions applicable to the subject covered taken from recent CPA examinations. The questions are in the same order in which the material is outlined in the text so that the student may easily refer back for information leading to the answers. Citations are also given stating the date of the actual examinations from which they were taken and the issue of the *Journal of Accountancy* in which the suggested answers were given. The authors have attempted to include all the questions given from at least the twelve most recent years of Uniform CPA. Examinations in Commercial Law, eliminating only those which have been repetitive.

The compactness of this book can be demonstrated by taking at random any particular section and noting the breadth of its coverage. Section Ten, which covers the field of Administrative Law, is a good illustration. Within the limited space of fourteen pages, besides giving definitions, history, and enumerating the rule-making powers of government agencies, the authors go into surprising detail of such far-reaching subjects as the Fair Labor Standards Act, the Federal Social Security Act, Wagner Act, Taft-Hartley Act, the Sherman, Clayton, and Robinson-Patman Acts, the various detailed securities laws, the Interstate Commerce Act and the various regulations having to do with carriers. Even the state areas such as workmen's compensation and discrimination laws are briefly touched on. For the most part, the outline of each of these acts gives sufficient information for the CAP law candidate to answer the generally broad questions no this subject appearing on the examination.

This book does not do away with the need for the usual classroom texts on CPA law, nor is that its pur-

pose. The authors have succeeded in providing a means for a thorough review designed primarily for the purpose of passing the examination. It will also do well as a supplement to the regular material in a commercial law course. By itself, the book cannot succeed in teaching the average student basic commercial law.

Each section covers separate topics in outline form. The coverage is both intensive and extensive within its scope, despite the title. It is gratifying to observe how concisely, yet thoroughly, each topic is covered, and how minute details creep in to enhance the student's review.

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Taxes

SHAW, T. T., EDITOR, *Working with the Revenue Code—1959* (New York: American Institute of Certified Public Accountants, 1959, pp. xi, 227, Price $3.50).

The materials for this and earlier editions of this book have been selected from the "tax clinic," a department of *The Journal of Accountancy*. The most helpful and pertinent items published since 1954 were chosen for this volume, then revised with today's need in mind.

This book is a handy reference manual for the practitioner who has a new or complicated tax situation. Its table of contents serves both as content and index since the items are cross-referenced according to the Code section number. The chapter titles are arranged like the Code and correspond to sub-chapters and chapters of the Code. Items helpful in interpreting more than one section of the Code are cross-referenced and listed in the contents under each chapter or sub-chapter with which they deal.

The book provides tax information of breadth, scope, and real practical value to the practitioner, teacher, and student.

J.S.L.

DON J. SUMMA, *Assignment of Income* (New York: The Ronald Press Company, 1958, pp. vii, 131, Price $10.00).

This book's general pattern is determined by its membership in Ronald Press' Tax Practitioners' Library, edited by Robert S. Holzman. Previous reviews, in these pages, of other books in this series carried opinions about merits of the approach selected for the series. Within the limitations of that approach, Summa has made a valuable contribution in his analysis of judicial views on the entity to which income or gain is taxable.

The heart of the book is Chapter 2 which analyzes about 150 cases involving "assignment of income." The basic problem is one of conflict between the taxing authorities' attempts to apply the progressive taxation principle and taxpayers' endeavors to deflect the incidence of taxation. The legal subject-matter involved in the taxpayers' efforts may include contract rights and various aspects of "property"; yet in a particular case the significant element may be the retention of "control." The conventional phrase used as the book title reflects the amorphous character of the problem matter, which is often molded according to judicial forms such as "earnings," "ownership," "beneficial interest in trust assets," "control," or even "satisfactions." Where the taxpayer's attempt to shift the tax liability is unsuccessful, the "assignment" has usually been characterized as "anticipatory."

The author's approach is that of classifying "assignment of income" situations in business categories. Earned income is differentiated from property income, and the latter is subdivided into ordinary investment income, royalties, rentals, gain from sale of property, and income which has its source in the ownership of mineral properties. A miscellaneous group includes about 15% of the cases, one-half of which relate to trust income. A dual-column principle is consistently applied. The first column describes "the attempted assignment" in a concise manner, and indicates whether the assignment, or deflection of tax incidence, was upheld. The second column is captioned "What the Court Said," and contains quotations or paraphrasings parallel to the first column statements, with appropriate citations. There is no discernible principle of arrangement of the cases within the broad business income categories.

The author has achieved the beauty of symmetry, while providing concise case-data for the reader's study. However, the method of arranging cases as used in the series sacrifices both the perspective which could be expected from a chronological or "evolutionary" treatment and the balance afforded by comparisons between court jurisdictions. A very limited analytical treatment of principal cases is included, however, in the opening chapter.

The typical following chapter rearranges the case citations. Here the new classification is by type of entity or association. The classes are: Corporations; Estates and Trusts; Corporation and Stockholder; Partnerships; and, at the beginning, Intrafamily and Individuals excluding cases which fall into one of the other classes. An attempt at a finer classification might have been expected on the basis of the author's recognition both of the importance of fact distinctions and of the significance of judicial rationalization. Sixty-six cases, or more than two-fifths of the cited cases, are carried under the "Intrafamily and Individuals" caption, without analytic subclasses such as the source of the income or the criterion applied by the court. The cases are arranged alphabetically under each taxpayer class.

This book follows the format of the series in stating "The Problem" in the opening chapter and concluding the sequence with a chapter on "Steps to Be Taken." The author has managed to avoid repetitiveness between the two chapters.

The introduction to Chapter 1 promises the reader a statement of federal income tax rules for the successful assignment of income. "Methods" of splitting income as

provided by statute, through joint returns and the use of partnerships, trusts, and corporations are illogically paralleled with "other situations" in which the taxpayer may divert income. The latter include the sale of corporate assets in connection with corporate distributions, the spreading of income over multiple corporations, and the short-term assignment of trust income for the benefit of a charity. The promised avoidance rules for the income-assignment area are introduced by a cursory treatment of not more than seven leading cases decided by the United States Supreme Court, including the earned-income case of Lucas v. Earl, the "property"-income case of Helvering v. Horst, and the trust-income case of Blair v. Commissioner.

The early promise of a statement of income tax rules for the successful assignment of income culminates in a statement of concepts and criteria which courts have employed in assignment-of-income cases. These criteria include the earnings test, ownership and control. The book does not, because it cannot, completely set out rules for identifying the circumstances in which one or another criterion will govern the result. Even concise fact summaries presented in Chapter 2 may be inadequate for forecasting a court's selection of a criterion or the weight to be accorded to competing criteria. The Wodehouse cases on pages 55 and 56 are in point.

The author motivates the reader of Chapter 1 to continued study by pointing to some effects of successful or unsuccessful assignment of income. Among the effects of unsuccessful assignment are the personal liabilities of officers and directors to the corporation under certain circumstances.

The concluding chapter is a fitting practical corollary to the problem of successfully assigning income. The emphasis is on the establishment of proof of intent by means of contemporary documents, statements, and actions. Continuity wavers during the final pages, and a substantive problem of income accrual is merged with the procedural tenet of advance planning.

Consistently with other books in this series the Appendix contains a short bibliography, a table of cases cited, an index to legal citations other than cases, and an alphabetic general index. Internal Revenue Code Sections 61 and 482 are reprinted.

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